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MAN AND EARTH

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THE RECIPROCAL RELATIONS AND INFLUENCES OF MAN AND HIS ENVIRONMENT

BY

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LONDON

GEORGE ROUTLEDGE & SONS LIMITED

NEW YORK: E. P. DUTTON & CO

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TRANSLATOR'S PREFACE

PROFESSOR KIRCHHOFF'S *Mensch und Erde* is enjoying so large a share of popularity and is attracting so much attention in Germany that the translator feels convinced that an English version will be welcome. This version has been prepared from the second amended German edition, and such merits as it possesses are enhanced by the aid and advice kindly given to the translator by the Author, who has been good enough to write Chapter V on *The British Isles and Britons* especially for the present work. With some hesitation the translator has added, at the publisher's request, a further chapter on *America and the Americans*.

A. S.

CONTENTS

PAGE

CHAPTER I

THE FEATURES OF THE GLOBE AND THEIR INFLUENCE ON THE SPREAD OF CIVILIZATION; AND ON THE 'TELLURIC SELECTION' OF THE SEVERAL COUNTRIES 1

CHAPTER II

THE SEA IN THE LIFE OF NATIONS 23

CHAPTER III

NATIONS OF THE STEPPES AND OF THE DESERT. 49

CHAPTER IV

THE INFLUENCE OF MAN ON THE LANDSCAPE . 83

CHAPTER V

THE BRITISH ISLES AND BRITONS 109

CHAPTER VI

AMERICA AND THE AMERICANS 159

CHAPTER VII

GERMANY AND THE GERMANS 175

CHAPTER VIII

CHINA AND THE CHINESE 201

I

THE FEATURES OF THE GLOBE AND THEIR INFLUENCE ON THE SPREAD OF CIVILIZATION

I

THE FEATURES OF THE GLOBE AND THEIR INFLUENCE ON THE SPREAD OF CIVILIZATION; AND ON THE 'TELLURIC SELECTION' OF THE SEVERAL COUNTRIES

THE discussion of the problem of the relative power of man over his domicile, or of the domicile over man, dates back to the time of Hellenic antiquity, but it was reserved to modern geographical science to find an unbiassed solution. Plato, in consequence of the idealistic tendency of his cosmogony, decides this dispute as a pronounced partisan by saying: '*It is not the country that owns the people, but the people that owns the country*'. Closer investigation, however, reveals on all sides an incessant action and reaction between the country and its inhabitants, between Man and Earth.

Certain though it be that man has at no time been, with respect to all his circumstances and affairs, directly dependent on mother earth, yet it is equally certain that he has never been able to free himself entirely from her fetters.

Who, in the present state of our knowledge, can doubt that the power exercised by our planet over our race is greater than that of the race over the planet ? No doubt the triumphant exclamation of Sophocles, 'Nothing is mightier than man" is now more true than ever it was before, but it is so only with respect to all other created beings, over whom man dominates by the force of his ever growing intellect. Man is, so to say, enrolled in the ranks of all the organisms of the animal and vegetable kingdoms ; he is like them a created being, a product of this planet. Like all other living beings he is confined to certain regions of the surface of the earth ; at a moderate depth beneath our feet the high temperature of the interior of the earth destroys all life, and if the aeronaut rises a few thousand feet into the upper air, he is driven back from those ethereal heights by unendurable cold and by the lack of oxygen. And our existence, thus limited in space, has also bounds set to it in time ; temporally too it is contained within the narrow limits determined by the nature of the earth herself. How prone we are to flatter ourselves with the notion that the earth has been specially created for our use ! And yet we know that our globe formerly rolled through space for millions of years in elliptical orbits of varying eccentricity without harbouring a single living being When at last the red-hot globe had cooled

down by radiation, and the waters of the ocean had been precipitated from the atmosphere upon the now rigid lithosphere of our planet, living beings made their appearance, man being the latest arrival. But he, like all his fellow-creatures, will be able to sustain life only as long as the sources of the indispensable conditions of life, primarily those of heat and of water, do not dry up. It is only comparatively lately that we have discovered the inconstancy of the climates of all localities ; we now know that in the course of long epochs of time glacial and warm periods alternate, and that there was a time when the north polar ice enshrouded the North American continent down to latitudes corresponding to those of Southern Italy. What would be the result if these oscillations of temperature were at some future time to effect a junction at or near the equatorial zone of the ice of both poles and thus extinguish all life ? Or what if the water, now driven back at no great depth by the action of the internal heat of the earth, comes to the surface in springs and wells, and fills the bed of the ocean, were, in consequence of the previous cooling of the interior of the earth, allowed to sink and disappear within the globe, as has evidently been the case with the smaller, and therefore more rapidly chilled, mass of the moon, whose surface is now devoid of all water ? In the one case an icy landscape, in the other

a desolate desert, would be the theatre of the extinction of the last of our race. But, as if no change of any moment had occurred, our planet would revolve in its wonted orbit, without life, without any pulsations of human hearts [1].

During this fleeting phase of man's existence our earthly home affords us shelter, food, and raiment, and determines the direction of our activities. But just because these very gifts cannot increase to an indefinite extent, a limit is set to all our endeavours, the human family being necessarily restricted to the land surface of the exterior of the globe. And how much of the fate of man is not disclosed by the contemplation of the distribution and the structure of the masses of the land, which Edward Süss so aptly designates by his winged word: 'the countenance of the earth [2]'! Terra-

[1] Denn unfühlend . . .
Ist die Natur:
* * *
Nach ewig ehrnen
Grossen Gesetzen
Müssen wir alle
Unseres Daseins
Kreise vollenden.

Goethe.

'Of moral purpose I see no trace in nature; that is an article of exclusive human manufacture.'

Huxley.

[2] *Das Antlitz der Erde.* We have no exact English equivalent to the graphic German word *Antlitz.* [Tr.]

firma rises out of the all-encircling ocean in three great world-islands, known as the Eastern, the Western, and the Australian Continents. Guided by Darwinian principles, the indisputable fact has been established that man must have made his first appearance on earth on our own Eastern Continent, which is much the largest of the three great masses of land. At that very remote epoch, apparently before even articulate speech had been formed, man, guided by the direction of the coast-lines, had wandered into the other two continents, so that, in the course of unnumbered kiliads, three principal groups of races and languages had formed themselves, according to the well-known laws of variation of organic forms, strongly emphasized as they were by the exclusion of all intermixture with the unchanged form of the original mother-race. Whatever appearances may be adduced of supposed traces of nearer kinship between the Mongols of Asia and the red-men, between the negroes of Africa and those of Australia, the fact remains that America up to 1492, and Australia up to 1788, were occupied by distinctly separate races of men, differing from those of the Eastern Continent physically, and still more linguistically and ethnically. The extensive Eastern Continent itself is also broken up into separate masses by numerous inlets of the ocean, by deserts, and by mighty elevations of land,

which brought about the splitting up of the original uniform mother-race into sub-races and nations, which, however, were not hermetically shut off from each other.

The distribution of the land into three separate continents influenced mainly the early stages of our civilization. It was on our Eastern Continent alone that cattle were domesticated for dairy purposes, and that the art of smelting iron, the most useful of all metals, from its ore was invented.

So fatal was the severance of the continents by the ocean till the boldness and skill of Europeans had effected their junction by constructing the 'flying bridges' over the seas, that the milk and iron industries did not even cross the narrow Berings Strait and reach the New World. Advanced as was the culture of the ancient American nations of Mexico and Peru, yet neither iron nor steel was known among them before the arrival of the Spaniards; and the reindeer, which was milked from times immemorial in all countries from Lapland to Eastern Siberia, was to the Esquimaux and to the red-man nothing but an animal of the chase.

Most of the land belongs to the Northern Hemisphere, and it was therefore from of old the chief dwelling place of man. Moreover, it occupies the largest share of the temperate zone of that happy belt of land where man's bodily vigour and force of will are

steeled without being exhausted as they are in combating the inclemencies of polar lands. Towards the south the continents terminate in pointed or wedge-shaped peninsulas, so that only narrow projections of South Africa and South America penetrate to any distance into the south temperate zone. Thus our hemisphere enjoys the double advantage of harbouring the greatest number as well as the most energetic members of the human family. In South America too the inhabitants of temperate Chile and Argentina are rousing themselves into vigorous activity ; but how feeble is their action compared with man's creative force in the Northern Hemisphere, as exhibited politically, mentally, and economically in Europe, China, Japan, and the United States !

Deserts and Polar lands will never be able to support a dense population. The arid regions of deserts or steppes, situated as they are between countries of more genial climes, constitute permanent barriers to the spread of civilization and to the intermingling of nations, because traffic through them can only follow routes leading from oasis to oasis, or, in the most favourable cases, along river-courses ; in other words, always along narrowly prescribed lines. Thus the Sahara kept for myriads of years our race divided from the negro races, and formed jointly with the deserts of Arabia the never crossed southern boundary of the

Roman Empire. The arid lands of Central Asia, which are rendered still more impassable by their massive tablelands and by the loftiest mountains on earth, have from all antiquity cut off India from Siberia, and China from the West. Navigable rivers, on the other hand are guiding routes and agents for opening up countries to the influences of civilization. In but few decades of the sixteenth century Europeans pentrated to the very heart of South America by following the banks of the Orinoco, the Amazon, and the Paraña rivers, whilst many thousand years had to pass over our heads before a similar result was reached in Africa, where the river-courses are barred by rapids and cataracts. A small troop of Cossacks conquered for the Czar the whole of Siberia in less than forty years by utilizing the slender, rootlike threads of the water-courses in the south of the country in their progress through the boundless forests of coniferous trees till they reached the Sea of Okhotsk, and precisely along these very same rivers Russian colonization advanced towards the east as far as Wladiwostock, the terminal point of the march of Europeanization, which is interrupted by only two inlets of the sea.

The face of the earth exhibits far greater variety than that of the moon : side by side with the monotonous plains of Africa and, above all, of Australia, we behold sharp

articulation of the lands, pre-eminently in the broad north of the Eastern Continent; to wit, coarser ones on the wide spaces of Asia and finer ones, almost as if chiselled out in miniature, in Europe. Thence come the great contrasts between the groups of nations of Asia, which comprise the two hugest conglomerations of peoples on earth—China and India—and of the nations of Europe, with their charming diversities within narrow limits. Geographically Europe is nothing more than a rather large peninsula of Asia, extending westwards from the Ural Mountains; but it has received the imprint of a separate quarter of the world by its incomparable, delicate articulation, numerous bays and gulfs, and partial severance into islands and peninsulas; it is, moreover, traversed by mountain-ranges, which both serve as complete lines of demarcation between the limbs and the main body, and break up the latter itself into smaller sections, representing a whole system of countries, which agree with that of the principal races of Europe. And as in the countries so in the nations that inhabit them, an artistic Unity is preserved amidst the greatest variety. Owing to her great similarity in soil, climate, and animal and vegetable world, Europe is far more uniform in character than Asia; the sheets of ocean-waters that penetrate her indented coast-lines are smaller in extent, and her mountain-

ranges which separate the countries are much less impassable, and thus it happens that there exists a common European civilization, but there is no civilization common to all Asia.

It is a problem as yet inadequately investigated by men of science, how it happens that nations not uncommonly occupy lands that are marked off by natural boundaries. Obtuseness alone will regard it as a matter of course that there are Portuguese only in Portugal, and no real Portuguese anywhere else; Italians only in Italy, Frenchmen in France, and in Britain practically only Britons. These are not facts inherent in the nature of things, but created by the march of events in history; nevertheless, countries have not received their inhabitants merely by accidental occurrences, such as state-craft, or conquest, or migrations of nations; no, the nature of the several countries themselves co-operated with man, partly by natural boundaries, and partly by the subtle influence of the locality on the men that have settled there. There exist elective affinities between a people and its home. These have naturally originated only on the spot, but they have taken such a deep and firm hold on the nation's character, that they seem inseparably connected with it. We cannot, for example, imagine Russians in England, nor Britons in Russia. The

Russian peasant, who has from times immemorial adapted himself to the extremes of climate characteristic of Eastern Europe, to the high temperature of summer and intense cold of winter, goes on doing so unconsciously by heating himself in a steam-bath till he is as red as a boiled lobster and then rolling himself naked in the icy snow, as befits a child of the central Russian forests. Having dwelt for centuries in lonesome small villages in the wood, he is his own carpenter, cartwright and wood-carver ; he has acquired skill in all sorts of handicraft, as he had necessarily to supply his own wants ; and in the seemingly boundless expanse of his native land he became a wanderer fond of adventure. In winter frost and snow enable him to traverse his pathless marshes on foot or in his sledge, and in summer he fearlessly plies rafts and boats in the navigation of his rivers ; it is only the sea to which he remains a stranger. Thus he was fitted to become what he is, a genuine colonizer of continental lands. With sound practical sense he successfully did his part in executing the ever increasing tasks of the incessantly growing domains of the Czar, till they reached the Sea of Japan. What a contrast to the Briton ! Inhabiting an island which seems specially created for navigating the whole world, he is a born mariner, possessed of tenacious endurance, of a bold spirit of enterprise, and of the

habit of keeping a sharp look-out; all evidently mental and moral qualities which were indispensable to establish his primacy on the ocean, and his predominant position as trader and colonizer in all parts of the world.

In some cases it is possible even now to furnish instances of the fact that the nature of a country holds searching muster amongst its immigrants, and bestows the privileges of citizenship on those only who are fit for it. Of such 'Telluric Selection', as I propose to call it, instances are presented, to my seeming, in one of the most remarkable facts noticed, viz. that the largest capacity of the chest indicative of the most fully developed lobes of the lungs are a distinguishing characteristic of all the nations that inhabit the three highest tablelands of the world, viz. Thibet, Mexico, and Upper Peru. The residents of countries situated at a high elevation above the sea must of necessity inhale larger volumes of air, because the rarefied atmosphere contains, volume for volume, smaller quantities of oxygen than does the air at lower levels. Even on the secondary mountain-ranges of Germany the inhabitants of the summits draw breath more deeply than those do who live at a lower level, as is proved by the measurements of our recruits. A man suddenly moved to higher levels can unconsciously adapt himself to the climate of

those elevations by breathing more deeply and more frequently, which is an invariable accompaniment of a more rapid circulation of the blood; thus M. Vallot, the French naturalist, noticed that after he had occupied his observatory on Mont Blanc the throbs of his pulse were minute per minute more numerous than they had been during his stay in Geneva. The contention that the above named three groups of nations that inhabit the highlands owe their greater expansion of the lungs to mere practice in the gymnastics of the chest is not borne out by the results of anatomical investigation, which shows that their lung-cells are both more numerous and more voluminous than is commonly the case. What other term can be suggested for the instructive coincidence of the high elevation of a man's home with the abnormal expansion of his chest than 'Telluric Selection'? When, either as roaming hunters, or as fugitives from oppressors, the ancestors of the present inhabitants of the highlands of Thibet, Mexico, and Peru first arrived in those localities, they were only able to sustain life with comfort in the attenuated atmosphere, so scantily supplied with oxygen, if by a happy chance they had lungs of the ampler structure above described. Those alone could look forward to a long and healthy life, and from them their descendants must have inherited the required adaptation,

which natural selection perfected more and more in the course of several generations till the needful peculiarity of lung-structure was reached. This theory has lately been confirmed to some extent by experiment. When in the east of Upper Peru, where the Amazon has already reached the lowlands, gold-washings were started on the banks of the river, the high wages of that pursuit induced the broad-chested Aimara red-men, descendants of the old Incas of Peru, to abandon their alpine homes and settle along the river-banks. But they soon succumbed to the climate, because the air of the lowlands was too dense for them. Only a few Aimara families survived, and when the second generation of them was working at the gold-washings they were visited by Dr. Forbes, an English physician. And what did he find? All these Aimara Indians had narrower chests, with lungs that were not required to consume a superabundance of oxygen. It is obvious then that telluric selection had immediately set to work, and had pitilessly exterminated all those who could not adapt themselves to the conditions of their new environments, whilst it fostered and tenderly reared up the breeds of all those who happened to be differently constituted and were able to accommodate themselves to their altered existence.

The West Indies supply another instance of such a selection made by the nature of

the country. The yellow fever, so prevalent in that magnificent group of islands, is far less fatal to natives than to new immigrants. How then did the former acquire their greater power of resistance to the pernicious disease-germs, seeing that all of them, both whites and blacks, are descendants of ancestors who were not natives of the country, but had settled there within the last four hundred years. The secret is revealed if we observe the uniform process of selection still going on before our eyes. Experience shows that the number of deaths from yellow fever amongst the immigrants is in proportion to the severity of the winter in their several native lands. The archipelago, in fact, grants citizenship to a higher percentage of negroes than of Europeans, and of these latter more to South Europeans than to Frenchmen, more to Frenchmen than to Germans, more to Germans than to inhabitants of Eastern Europe, whilst all the rest are consigned to the grave. In accordance with the varying immunity from the ravages of this fever, even amongst individuals of the same nation, it may happen, for example, in Cuba or Porto Rico, that Andalusians are attacked, but they recover more readily than do the natives of countries which have snow in winter. Again, in the case of all new arrivals in the West Indies it has repeatedly been observed that, at every prevalence of

that virulent epidemic, the individuals that have passed through it are rendered more immune from the effects of the miasma, even if they have not been prostrate at all during the whole time, nor have suffered any discomfort whatever. Similarly it is with such horses in the Boer states of South Africa that have exceptionally survived the yearly 'horse epidemic', and are designated as salted horses, which, in consequence of their immunity, fetch a higher price, although they assume after their victorious resistance to the disease a peculiar imbecile expression. Amongst ourselves too, those of us who have had the measles or scarlet fever are either safe from a second attack, or recover more readily if they do fall ill [1]. We Europeans have had to acquire our greater power of resistance to this poison by pitiless extirpation of the unfit; but amongst races that are still in a state of nature the introduction of the slightest disease-germ sweeps men away wholesale and most appallingly. We, being hardened, notice the effect of this persistent selection only during the prevalence of an epidemic of scarlet fever or measles by a somewhat increased mortality of infants, but amongst a people that had never come in contact with that disease it produces a

[1] Vaccination is based on the same experience. [TR.]

most gruesome mortality. Thus, shortly after the occupation of the Fiji Isles by the English in 1874, 60,000 of the brown islanders, both young and old, were swept away by measles, which the invaders seem to have introduced without being aware that they themselves were infected with the disease, so slight was the nature of the malady.

In the extreme of North America we find that the Esquimaux exhibit an ideally perfect adaptation to the stern conditions of life in the Arctic Zone. Nature removes every frail body from the scantily furnished table of the Esquimaux. As for their clothing and homestead they have elaborated, taught by an experience of centuries, an excellent defence against an inclement temperature, which not uncommonly falls below the freezing point of quicksilver. The Danes, too, that have settled on the west coast of Greenland, can sustain life only by clothing themselves after the manner of the natives, with tightly closed furs that leave a free space between the skin and the fur coat, where the imprisoned air forms an excellent non-conductor of heat on the principle of the double windows used in countries subject to severe winter cold. The Esquimaux can only support himself by living near the shore, because there alone he can hunt seals even in winter, and seal-hunting is his only means of livelihood the

whole year round. No Esquimaux youth is permitted to induct his somewhat fish-scented lady-love into his home before he has given proof of his ability to maintain her by killing his first seal.

But what an unexpected, apparently incomprehensible contrast is presented to us! In presence of the Gorgon face of the ice-clad aspect of the polar regions with their cruel winters, where for several months on end the earth is not cheered by a single ray of sunlight, the Esquimaux revel in their indestructible joyousness of heart. A striking instance of natural psychical selection! The enduring absence of light acts depressingly on the minds and spirits of men, and by an inevitable reaction undermines the health of the body. That is why Julius Payer selected the crew of his ship *Tegetthoff* from the ever merry inhabitants of the small Quarnero Archipelago,[1] and what ingenuity he had to exercise in the invention of games and pastimes to rescue his men from dull despair, when his ship, embedded in ice, drifted helplessly away into the apparently endless polar night! Indeed, only men endowed by nature with serene cheerfulness are able to sustain life in those high latitudes into which the

[1] This small group of islands is situated in the sunny Gulf of Fiume between the eastern coast of the Istrian peninsula and the west coast of Croatia. [Tr.]

New World extends. This bright indestructible joyousness of heart was hereditarily passed on from generation to generation to a small number of thousands, and that invaluable boon was preserved to them by the inexorable sentence of death pronounced by nature on any member of that community given to melancholy.

Another enviable characteristic of these 'last human beings' is their peaceable disposition, an evident product of telluric selection. From want of fuel the Esquimaux can only keep from being frozen to death by their living close together and warming each other. Their huts, albeit narrow and low, can be warmed to the required temperature only if, with low partitions, they are arranged to accommodate a number of families. 'Now,' says fate, 'you will either live peaceably together, or be frozen to death separately'. Wisely, this merry folk chose the better alternative, and learnt, in spite of their naturally more choleric than phlegmatic temperament, to bear with each other to such a degree that even quarrels concerning rights or honour are settled by satirical, lyrical contests; the parties to the suit inveigh against each other in presence of the whole community by reciting satirical songs, and he is declared victor in this bloodless battle who has the final laugh on his side. Thus does an unbiassed investigation of the causes of

phenomena reveal the fact that man is everywhere, to his innermost heart, directly or indirectly a genuine product of his native land.

II

THE SEA IN THE LIFE OF THE NATIONS

II

THE SEA IN THE LIFE OF THE NATIONS

THE only absolute power on earth is the sea. The bosom of the deep brought forth land itself, whose insular fragments only here and there break the continuity of the all-embracing ocean. The sea alone constitutes a whole between the atmospheric envelope and the mineral crust of the earth, and essentially the earth is still a planet surrounded by the ocean. Again, organic life in its mysterious origin must be explained as a pregnant result produced by the sea and its movements, at the period in which there was no land, and a single unbroken ocean inclosed the terrestrial sphere as a shell, similar to the atmospheric envelope in turn inclosing the ocean. And if, indeed, evolution of life on earth follows a uniform plan, then even vegetable and animal forms on land, including man himself, are descended from marine ancestors.

However, in the course of æons, land animals adapted themselves to conditions

outside the ocean, and so a vast chasm gradually arose between creatures of the land and of the sea. Rivers and lakes, by their nature elements of the land related to the ocean, do, indeed, in exceptional instances blur the sharp boundaries confining the fauna world of the sea. Some fish, like the eel and the salmon, live in either salt or fresh water, and some sea-fish gradually accustom themselves to the water at the mouths of rivers, which is less salt than that of the open sea, and, finally, their descendants, swimming upstream, remain in fresh water permanently. The little cœlentera, for instance, in recent years passed from the North Sea, through the brackish waters at the mouth of the Elbe, into the Elbe and Saale, and even reached the fresh-water lake at Eisleben. Seals bear on land; sea-birds with great powers of flight, like the frigate-bird and the albatross, ply their mighty wings over the sea thousands of kilometers away from the coast, for days at a time. Nevertheless, in the dispersion of living creatures the coast remains the sharpest dividing line, and it is obvious that man, whose entire organization points to the fact that his ancestors in the Tertiary age were fruit-eating inmates of the woods, from the beginning lived exclusively on land. The coast-line of the Eastern Continent may be considered the uttermost limit of the original home of primitive man.

Man could have been only scared by the sea when it first confronted him in all its inhospitality, with its sudden dangers threatening his fostering mother-earth through high-tossing breakers, flooding tides, and fearful storms. In the face of this far-superior enemy, attacking him with elemental power, unprotected man in the first place felt himself forced into an attitude of defence, especially along flat coasts, where the rise and fall of the surface of the sea, corresponding to the incoming and outgoing tides, produced the floods that swept up far beyond the low land of the coast. Pliny has given a dramatic picture of a struggle with the ocean such as must have taken place in prehistoric times. He tells of the North Sea at the time of the Roman Empire, when the German coast was still unprotected by dikes. Every day, he says, the flood tide submerged the land of the Chauci, a German tribe. The people, who took refuge in their huts, resembled seafarers, and the setting in of the ebb tide lured them out, like castaways, to catch fish in the receding waters, or to pick up turf washed upon the damp clay ground by the flood. This example does not present the most elementary aspects of man's struggle for existence with the sea, for the means used were in a measure perfected. The Chauci had advanced so far as to provide a secure foundation for their huts by throw-

ing up mounds, *Wurten*, such as are still used by the inhabitants of the Halligen, marshy islands off the west coast of Sleswick, which, on account of their small size, are not provided with dikes. It needed only the 'golden circlet' of the dikes along the coast to secure permanently to the German mainland the belt of land once the playground of the shifting tides as a heavy marsh land rich in pastures and wheat fields. We know from history what a blessing this triumph has been to the inhabitants of the coasts of Germany and Holland since the Frisian tossed up his last spadeful of earth, calling out proudly to the sea, the *blanken Hans* (gleaming Hans), now held within strong bonds, *Trutz nun, blank Hans* (Do your worst now, gleaming Hans!). Since then the boast has been true: *Deus mare, Batavus litora fecit.* The success achieved over the hitherto all powerful opponent only confirmed the people in their pride of freedom. The construction of the dikes had required energetic, self sacrificing effort of many working for a common end, and the more unremitting the necessity for united labour in order to preserve them, the hardier the growth of the communal spirit behind this fortification against the tyrant Okeanos, that spirit which restrains self-seeking individualism and makes for civil order. Thousands of years before, a similar result had been effected by the construction of dams and canals on the

lower Hoangho, in Babylonia, and on the Egyptian Nile.

Incomparably more important, however, seems that decisive act of prehistoric man, when, conquering his terror of the unknown, he boldly trusted himself to the hostile element, and fared over the surging limitless waters on a fragile raft, or in a rude dugout, or in a boat of roughly joined planks. This progressive act, containing the germ of man's dominion over the earth, may have been independently executed on more than one occasion, when the various hordes, strangers to one another, into which our race had long been split up by extended wanderings, arrived at the shores of the ocean. Where streams empty into the ocean, the attempt to reach the high seas might be made in river boats. Elsewhere, the impulse to move upon the sea for a longer time than swimming permits led directly to the art of building and guiding ships, the art which, in its wonderful state of development, enables man, alone among all creatures, to overstep the limits of the coast-line on all sides and reach the most distant points.

But what could possibly have impelled man to this reckless venture on the ocean? Hunger, that stern and omnipotent educator of mankind, was probably a frequent motive, as may be surmised from the custom of the Chauci to hunt for fish in the ebb tide. Again, in flight before a superior hostile

tribe, fear may often have made man inventive, and led him to prefer the deceptive sea as a temporary refuge to the sure fate at the hands of the enemy. If a tribe took up its permanent abode at the seacoast, two causes may have operated to educate man to gradual confidence in the once dreaded element: First, the value of the animals abounding in the waters along the coast; second, the allurements of an opposite shore. These causes may have operated separately or together. The lack of food stuffs in the polar lands would never have tempted the Esquimaux to push beyond the eightieth degree of latitude. This was effected by the promise of food held out by the teeming animal life of the Arctic Sea; in fact, it was the capture of seals that led these stout-hearted inhabitants of polar lands to cross the icy American straits, and penetrate to the most northern point ever inhabited by man, making of them such unexcelled masters in the handling of kayaks that a skilful, hardy Esqimaux can paddle his boat from Rügen to Copenhagen in one day. The colonization of the Hellenes progressed from the Ægean Sea, along the shores of the Black Sea, toward the course taken by the tunny in its wanderings, just as the colonization of their nautical masters, the Phœnicians, extended to various places on the shores of the Mediterranean, influenced by the presence of the mollusc from which

they got their purple dye. In districts where the interior is forbidding (which is the case not only in the polar regions) through the bareness of sheer rock, the bleakness of moorlands, and overgrown forests, and where the sea, on the other hand, with its fish, molluscs, and crabs, presents an inviting bill of fare, we find people who, like seabirds, live almost exclusively on sea food and use the land only as their dwelling place. Such are the Terra del Fuegans, who live at the extreme southern end of the inhabited earth, and the Tlinkit Indians, along the south-eastern coast of Alaska, which is indented with fiords like the coast of Norway, and cut up into islands. The latter have become so accustomed to their slender, well-built boats that they use their feet unwillingly and awkwardly. Similarly, in Europe, the Danes have developed into an essentially coast-inhabiting, seafaring people, since a portion of them, under the appropriate name of Vikings (people of the fiords), established settlements between a sea teeming with fish and the bare fields of the inland. The history of the Normans unfolds an impressive picture, showing how readily the bold seaman turns sea robber. The Normans, their venturesome spirits lured by the wide freedom of the sea, soon transferred their predatory expeditions from the home soil to foreign lands. They sailed up the streams of eastern England, up the

Seine and the Elbe ; they harried Cologne on the Rhine, and they entered Sicily as conquerors. Of the sea the same may be said as of the desert, that rich booty entices the foolhardy to brigandage, especially when acquaintance with the lay of the land and a sure hiding place promises successful rapine. The Dalmatian coast, with its concealed coves and narrow inlets, presents a number of such sally ports and loopholes for escape along one whole side of Adriatic ship routes. For this reason it was a constant seat of piracy, even in ancient times ; and when Rome sent a messenger to the Illyrian queen Teuta to demand the cessation of buccaneering, her proud answer, that it did not concern Rome, that it was the custom of her people, had a certain geographical justification. Opportunity not only makes thieves, but rears a nation of robbers.

Recently doubt has been expressed, rather hypercritically, of the value of bays and islands as a nautical impulse to the inhabitants of coast lands. Beyond the even coast-line of the Australian and the African mainland, unfringed with islands, the inhabitants have lived from the earliest days devoid of all connexion with the sea. Yet no one would venture to say that the negro shows no aptitude for the seafaring life. On board our vessels many a black African has done valiant service as sailor.

In fact, the whole race of Kru negroes, on the seaboard near Cape Palmas, have won world-wide fame as the best sailors employed in the West African merchant service, though, it must be confessed, that this is true only since passing European vessels have hired the 'Kru boys' for the work. However, it seems significant that the one tribe of negroes that pursue navigation of their own impulse, the Papel negroes of Portuguese West Africa, south of Senegambia, should have sprung up precisely at the estuary of the Rio de Geba, opposite to which lies the Bissagos Archipelago. Along those coasts of South America that are almost entirely bereft of islands and peninsulas the European discoverers encountered nothing more advanced than rafts, with the exception of the bark canoes of the Terra del Fuegans. On the other hand, near the mouth of the Orinoco, at the point where the West Indies start out from the mainland, the Caribs were using seaworthy vessels, steered with a helm and catching the wind in cotton sails. They were dreaded pirates, and had begun the conquest of the Antilles. Again, on the west side of North America the coast assumes a fiord-like character at the strait of Juan de Fuca, precisely the point at which the Indian tribes ignorant of seacraft border on those possessing a high degree of nautical skill. In Asia and in Europe

alike the acme of nautical development displays itself on the most indented edges of the continents. Among the Asiatic seafaring peoples from Arabia to Japan superiority was achieved early by those inhabiting the vastest of tropical archipelagos, which occupies the middle position in this chain of countries. Here, among the Malays, the origin of an excellent art of shipbuilding must be sought, as well as the starting point of the enormous dispersion of the Malay race over the innumerable islands of the South Sea. Long before the Christian era the migration of the Malays, slowly consummated, had carried to all parts of the largest of the oceans one and the same type of rowboat—slender, sharp keeled, often provided with outriggers as a safeguard against capsizing, and its speed increased by matting sails—a type which throughout the whole region has crowded out the awkward, cylindrical dugout. In such surroundings developed the Polynesian variety of the brown race, of all branches of the human kind the one most intimately and most variously connected with the ocean in material and in spiritual life, even as pictured in poetry and myth. These people upon their tiny coral islands, always breathing the balmy sea air, lead an amphibious life, almost as upon ships riding at anchor on the high seas. They learn to swim earlier than to walk; as infants they are

carried upon the arms of their mothers through the foaming breakers. Examining the south-western part of Asia, the Indian and Arabian peninsulas, we realize that the never-ceasing alternation of the monsoons has been the generous promoter of traffic on the Indian Ocean. During the winter season of the northern hemisphere, the monsoon steadily drove the vessels to the east coast of Africa, and in the summer the same force carried them easily homeward to the Indian or Arabian ports. In these regions, then, earlier than elsewhere, a profitable intercourse was established across a vast ocean between two continents and widely different races. Thus it came about that the Indian bride was adorned with bracelets of African ivory, and the Indian art of rice-growing was transported by slave dealers as far as the Congo. Thus originated the Ki-suahili dialect, the language of the Bantu negroes intermixed with Arabic elements, and the commerce, brisk to this very day, between German East Africa and Bombay. And thus it is explained why Indian capitalists of large means have never ceased to live on the coast under German protection. Finally, what a brilliant series of nautical achievements in the course of ages is summoned before our mind's eye when we recall Greece, Italy, the Iberian Peninsula, and the Atlantic coast lands of Europe. Navigation on the Mediterranean

was of earlier date, but navigation on the Atlantic attained to a higher stage of development in antiquity, because it was infinitely more dangerous to wrestle with the ocean than with the sea. Greek or Roman merchant vessels could not presume to enter the lists with the stout vessels of the Veneti, a Celtic tribe occupying what is now Brittany. They were built of solid oak planks, their anchor chains were of iron, and their sails were of leather. The journeys between Norway and Greenland, accomplished for centuries by the Normans in their great rowboats, their blacktarred 'sea horses', were more valiant achievements than the passage of the Columbus caravels across the quieter southern ocean, with a compass as guide. The latter, to be sure, was fraught, historically considered, with more important results. But it was reserved for modern times and for the four countries of central position—France, the Netherlands, England, and Germany—to derive greatest benefits, in the direction of world-commerce and the establishment of colonies, from their favourable position on the shores of the most frequented of the oceans. To bring about this unprecedented rise of seamanship, it was necessary that America should first be revealed to the eyes of Europe as a stimulating goal. In the New World, again, the greatest attainments in modern naval architecture and sea traffic were reached in those

parts in which endless forests supplied ship-builders with valuable timber, and especially in those parts in which the indented coast-line offered bays, inlets, sheltering ports at the mouths of rivers, and streams navigable many miles inward for moderate-sized vessels ; that is to say, in Canada and the north-eastern part of the United States—another evidence that a causal relation subsists between the natural opportunities granted by coast lands and the nautical pursuits of their inhabitants.

To invest this relation with the compelling force of a natural law were inane, pseudogeographic fanaticism. Man is not an automaton, without a will of his own. The suggestions thrown out by the nature of his birthplace sometimes find him a docile, sometimes an indifferent pupil. What is now the world-harbour of New York once served the Indians as nothing but a hunting place for edible molluscs. On the same rock-bound coast that educated the Norwegians into intrepid sailors, the Lapps are at present eking out a paltry existence as fishermen. The Anglo-Saxons, on their arrival in Britain, were so absorbed by combats with the native Celts, and later by agriculture and cattle raising, that they completely abandoned all pursuits connected with the sea. Alfred the Great had to have his vessels built in German dockyards. To this day few of the inhabitants

of the Cyclades take to a life upon the sea ; they plant wheat, cultivate the vine, or pasture their goats. Since the Dutch have become affluent, the nautical activities energetically prosecuted by their ancestors in more straitened circumstances have fallen into neglect, and in the Belgian provinces of Flanders and Brabant, the Netherlander, more easily winning a subsistence on his fruitful soil by agriculture, industries, and domestic trade, has always been apt to resign to foreigners the very considerable sea traffic of his country.

If, however, man ventures to pit his strength against the elemental power of the sea ; if he goes further and elects as his vocation the sailor's struggle with storm and seething breaker, then the poet's word in its full significance may be applied to him : 'Man's stature grows with every higher aim'. The mariner's trade steels muscle and nerve, it sharpens the senses, it cultivates presence of mind. With each triumph of human cleverness over the rude force of nature it heightens the courageousness of well-considered, fearless action. Observe the weather-beaten countenances of our tars under their sou'westers, how it has become almost a habit with them to dart searching looks into the distance. Their manner is taciturn, but betrays efficiency and alertness. No sooner are their latent reserve powers challenged than

the apparent sluggishness of their inactive moments is replaced by energy and amazing endurance. In those countries in which, as in Great Britain and Norway, the sea attracts votaries from extended circles of the population, and the seafarer's calling enjoys respect as a pillar of the commonwealth, the admirable traits of the seaman's character stimulate wholesome imitation even among the landsmen, an effect that is heightened when the coast is but little removed from the interior, so that seacraft in all its clearly defined peculiarity is present to the minds of the people. Furthermore, if in the wake of greater intimacy with the ocean, and through it with all parts of the world, the masses come to entertain transmarine commerce and colonization schemes as familiar notions, as so often happens in the great nations that are the bearers of civilization, then the people as a whole participate largely in the sailor's fresh venturesome spirit; in his daring courage and his wide intellectual horizon, enlarged by contact with foreigners. A typical illustration of this truth is afforded by the contrast between the Spartans and the Athenians of ancient times—the former, brave but narrow-minded, living a conservative life, walled in by the mountains that define their valley of the Eurotas, and further debarred from foreign traffic by the artificial obstacle of iron coin not passing

current abroad ; the latter, the Athenians, the Ionian race of progressive seamen, revelling in the sea breezes of the Ægean, and, their ambition overleaping the bounds of space, are filled with the exulting desire of achievement.

Primitive man in all probability was barely acquainted with the ocean. For later generations it was an object of fear and terror ; but when men began to inhabit the seacoast, drawing freely upon the treasures of the deep and making its broad back amenable to their pleasure in reaching distant shores, they approached it closer and closer. Yet man never succeeded in confining the sea in fetters of slavery ; on the contrary, he came to worship it as a creative deity. The entrancing beauty of the sea when in calm weather the sails glide peacefully across its mirror-like surface, genially reflecting by day the brilliance of the sun, and by night the silvery sparkle of the star-spangled sky ; or, when the storm whips up the waves, flaming streaks of lightning flash through the livid dullness of cloud and water, the breakers beat against the precipitous rock, and the vessel is tossed about by the tempest ; and again, when, after the gale subsides, nature is once more serene, and deepening colours in many-hued play, never seen in such perfection on land, are shed harmoniously over sea and sky. All this not only inspired poetic

descriptions in Homer's and Ossian's epics, it re-echoes in accents true to nature in the simple lyrics improvised by the strand folk; and the painters of all seafaring nations that have attained to distinction in art have immortalized the awe of man at the first sight of the grandeur of the ocean.

Closeness to the sea has powerfully promoted science and technical skill, if only by urging both the construction of necessary vessels and steady improvement in the art of building them. To adduce the completest instance, how multifarious have been the applications of scientific principles and the demands made upon technical ingenuity since the nineteenth century created the steamboat, which enables man to cross the ocean in the face of wind and tide. The effort to make navigation as secure as possible has indirectly had a stimulating influence upon a large number of the sciences. On the Caroline Islands there are still living, hoary with age, a few members of the remarkable guild in which certain astronomical knowledge valuable in steering boats was hereditary. It knew accurately the position of the fixed stars with regard to the summer and the winter horizon, and at the same time it had a more precise acquaintance with the relative situation of islands for many miles around than the geography of the civilized nations contemporary with it could boast. To Italian navigators our

sea service owes the introduction of the compass, based upon the peculiarity of the magnetic needle, first noticed in China. Not only has the compass kept numberless vessels from straying out of their course in starless nights and foggy weather, but without the huge mass of observations seamen had made in all zones, by means of the compass, a Gauss could not have grappled successfully with the problem of the magnetism of the earth. And if, hundreds of years ago, the surveyors in the Clausthal mines, consulting their compass by the light of the miner's lamp, laid out their subterranean corridors with unhesitating certainty, then, verily, this is a cultural echo of tumultuous waves dying away in the womb of mountains far removed from the sea.

But its supreme gift to man lies in the fact that the ocean alone afforded him a possibility of becoming acquainted with the globe as a whole ; it unveiled the face of the earth for him. Knowledge of every part was followed by trade with every part, uniting the economies of single nations and sets of nations into a world economy. Finally, by means of universal commerce, such as only the all-embracing ocean can create, the olden separateness of the human races according to their native continents was wiped out, and the first steps were taken toward a spiritual alliance comprehending the whole of mankind. That this consum-

mation should have been brought about primarily through world commerce is due to the not wholly evil power of the desire for gain. Nearly two thousand years ago Strabo watched seamen risk their lives on the tossing billows of the high seas while transferring wares destined for Rome from merchant vessels to lighters, because even then the Tiber was too shallow for heavy navigation, and he exclaimed, 'Verily, the desire for gain overcomes all difficulties'. Since time out of mind the ocean opened up to man the freest and, what is of paramount importance, the cheapest paths around the globe. From mines in the province of Shatung we shall soon be in a position to deliver cheaper anthracite coal at Tsingtau than could be offered for sale there if brought from England. On the other hand, Milan, not to speak of the Italian coast, is too distant by the overland route for German coal to supplant English coal, because the latter can be transported by sea almost directly from the mines. Italian oranges can be bought for less in Hamburg than in Munich or Vienna, as freight by sea from Sicily to Hamburg is not so costly as freight by land, say, from Hamburg to Berlin. On account of the low freight charges, trade by sea is everywhere most lucrative. In order not to shorten the inexpensive sea route unnecessarily by a single kilometer, the great seaports have arisen in the innermost recesses

of ocean inlets. So enormous is the profit derived from world commerce by sea that it yields enough to furnish the vast sums swallowed by the construction of vessels and needed to reward the hard labour of the gallant crews who, far away from home, are exposed to constant peril, bidding defiance even to the dread typhoon.

'Unfruitful' Homer called the sea. Yet what a wealth of treasure it showers upon man from out of its never-exhausted fund, and more still by carrying to his feet the products of the whole earth with the smallest conceivable injury to their marketable value. The countries situated on the sea-coast, especially in the temperate zones, where devotion to work is at its intensest, are witnesses to this truth. The busiest cities, serving world commerce as seaports; the wharves; the industrial centres, desiring to have at first hand the raw material produced in foreign ports, are connected by a chain of smaller coast settlements, which likewise depend in part upon sea commerce or upon the coasting trade and the fisheries, and are usually surrounded by well-cultivated fields, fertile by reason of the mild sea breezes wafted over them. It is the more easily attained prosperity that lures men to the coast. Therefore islands, as compared with the neighbouring mainland, and smaller islands—conditions on the whole being equal—as compared with

larger ones, are distinguished, in consequence of their relatively greater coast lines, by greater populousness. Wherever land and sea touch each other, there, naturally, are most apparent the blessings which the sea bestows upon mankind.

Finally, let us cast a rapid glance at the political importance of the sea. From what has been said it is obvious that every state, as soon as it realizes the advantages of sea life to its citizens, will strive to extend its territory to the sea, though it should only secure so tiny a strip of coast as Montenegro recently obtained on the Adriatic. He who has but one foot planted on the coast can despatch his vessels over the whole earth. With but a single port, to what a commanding position in sea commerce, in dominion over the sea, and in colonization as far as the most distant shores of the Black Sea, did Miletus attain in antiquity and Genoa in the Middle Ages. Switzerland, founded in the heart of Europe on the Alpine battlements, comes to mind as the only one and as a remarkable example of a state carrying on trade with the whole world by means of the vigorous industrial enterprise of its citizens, though it can never hope to acquire coast possessions. But, when disposing of her products and transporting them, how painfully Switzerland feels her dependence upon the customs regulations and the railroad rates prevailing among the four great powers encircling her.

Russia, on the other hand, affords the most striking instance in history of a state purely inland in origin advancing with conscious intent, step by step, to the shores of all the seas in its surroundings, and attaching them to itself until its banners wave from the the Baltic to the Yellow Sea.

But the best, indeed the most indispensable, gifts of the sea to the State, as such, are these three : independence, union, and plenitude of power. Ratzel properly points out that the sea is absolutely uninhabitable, hence constitutes the securest defence of a state. How much less guaranteed would the freedom of the greatest republic seem if the United States had not won the Pacific in addition to the Atlantic littoral. A state with seagirt territory, like Great Britain, Japan, and now Australia, the new island state, can be assaulted only in spots, by blockading fleets. By the preponderance of her sea front, France seems better protected than Germany. In the same way friendly intercourse can penetrate only here and there, at given points, to the interior of a state limited by a coast-line. Therefore, state boundaries marked by the sea are ethnically more definite than the vaguer lines on land, and in this respect superior to them. They are a better aid in promoting and maintaining the coalescence of mixed races into a single nation. History affords a solitary example of the reverse ; the

Mediterranean, surrounded by the provinces, instead of itself surrounding them, was the power that bound and kept together the elements composing the mighty world-empire of Rome. Incessantly the ocean brings unity and power from without to all states upon whose edges it breaks, and which understand its admonishing call. Greece and the Apennine Peninsula, with their mountainous interior, transfer the better part of their traffic to the coasting trade, which day by day brings inhabitants and possessions from the north into contact with those of the south, heightening the community of interests, and at the same time leading the mind constantly beyond the home shores of the high seas.

More than anything else sea trade, together with every sort of activity demanding transmarine effort, whether it be vast industrial enterprises, technical achievements on sea, or colonization, establishes an intimate connexion between a nation and the rest of the world. At the same time it welds together, in indissoluble union, the interior of the state with its coast provinces, the only paths along which lively exchange is effected with foreign parts. As with hammer blows, it brings home the realization of kinship and unites the parts into a whole. The Germans feel this more strongly now than ever. No Hohenstaufen will again turn his back indifferently upon the German coasts, to

cross the Alps and lead campaigns against Rome. No Hanseatic League of to-day would have to lower its flag in displeasure for lack of imperial protection of its glorious deeds. A fleet of ironclads floating the German imperial banner, and growing day by day, guards their merchant marine on all the seas, and to the furthermost shores within and beyond the territory under their protection it extends its sheltering arm over every honest enterprise undertaken by German citizens. Thus, defended from hostile injury, the goods of the world acquired by German industry flow over the threshold of the sea into all the provinces of their land, raising the prosperity of their people to heights never before attained, widening its spiritual horizon, and fostering the power of the state. The glory of the German Empire lies firmly anchored in the ocean.

III

NATIONS OF THE STEPPES AND OF THE DESERT

III

Nations of the Steppes and of the Desert

It would be most uncritical to imagine that every harmony between the character of a people and its natural surroundings is due to the country. We are apt credulously to accept the view that the smiling, sunny landscapes of Southern Europe naturally produced the joyous serenity of the Greeks, the Southern Italians and Southern Iberians. It is no doubt true that the few indispensable necessaries of life are easily gained in the genial, subtropical climate of the south; and it is also true that a people, freed from material cares, prone by disposition to entertain joyous theories of the universe, and endowed with artistic gifts, would be impelled by its glittering skies, land and water, to cultivate the arts with ardour; yet we are warned by a single classical instance taken from the New World, against adopting too hastily the generalization that the disposition of a nation is a direct reflex

of its environments. The descendants of the illustrious civilized race of the Aztecs have retained the hereditary melancholy expressed in the countenance of the red-man, in spite of the azure blue of the radiant firmament of Mexico, which, with its snow-capped volcanoes, far transcends in beauty and attractive charms the regions at the foot of Vesuvius or of Etna.

Fishermen lose their craft if they migrate inland into regions devoid of water, but natural disposition may survive change of place.[1] It is only by cautious, comparative methods of investigation that we can arrive at a reliable proof of the existence of a causal connexion between the nature of a country and the disposition of its inhabitants. We must examine whether whole categories of landscapes, which occur, sharply individualized, in many different quarters of the world, exercise equal, or at least similar, influence on their inhabitants, even on those of very various descent, and in consequence probably also of most various endowments. Such landscapes with strongly marked peculiarities are found favourably distributed in all the arid regions of the world ; some are sparsely and intermittently watered every year, like the grassy plains, the '*stjeps*' of Russia, whilst others are true deserts, which are practically rainless.

[1] Coelum non animum mutant, qui trans mare currunt. *Horace.* [TR.]

Steppes, and still more deserts, have at all times exercised a mighty influence on the fates of nations by their scanty store of drink-water, and consequent scarcity, or even total absence, of human settlements. This circumstance so enhanced the difficulties of traffic that whole groups of nations that approached these regions from opposite quarters were kept asunder by them more effectually than oceans are apt to do. The navigation which bridged the oceans has created a most active intercourse between Europe and America, whilst the great desert has for untold centuries severed the Sudan, the land of the negro, from the northern coasts of Africa, washed by the Mediterranean. This severance is but slightly mitigated by the sluggish march of the so-called 'Ship of the Desert', the camel. The civilization of the ancients was arrested in its southward march by the waterless aridity of the Sahara and the Arabian deserts, which formed the impassable southern boundary, set by Nature, to the universal empire of Rome. The barren region of Central Asia, which for extent is comparable with the Sahara, and which is moreover filled by the loftiest mountain-masses of the globe, forms a barrier between north and south that prevents all mutual contact between the inhabitants of India and Siberia, and has even in an east to west direction, where the elevations of the ground

are of less moment, so effectually separated Turan from China that the conquering hosts of the latter country have descended but rarely to the Oxus and Jaxartes, and history shows that even the basin of the Tarim of Eastern Turkestan was but an appendix loosely attached to the Chinese Empire and ever ready to revolt. In consequence of the scarcity of wells in the "Far West" the coasts of California were, before the opening of the first Pacific Railway, as inaccessible to the east of the United States as if they belonged to another division of the globe. The burning deserts or half-deserts of Australia, devoid as they are of water and shade, would but for the electric telegraph be devoid of all means of intercourse.

In addition to their dissociative effects upon all the surrounding nations and tribes, steppes influence their inhabitants in many ways, as is seen at a glance from their flora and fauna. These are specially adapted to the dryness of the atmosphere, and to the rarity, or at least unequal allotment, of precipitation to the seasons. Such adaptation is seen in the scanty sap of the woody vegetation of Australia, which is protected from withering both by its narrow leaves, encased in a thick cuticle, and by its astonishingly deep roots, which detect what moisture still may exist in the soil after a persistent, universal drought of many months.

The same holds of the curious, leafless Salsolaceae, which protrude like huge inverted birch-brooms from the soil of the otherwise utterly bare plains of Turan ; also of the date-palm, which the Arab truthfully describes as having ' the foot in water, the head in fire', being a plant which seems to dread the rain, and to live on the moisture in the ground ; the giant columnar cactus in the gloomy Mohave Desert, and the abundance of various species of creeping gourds and cucumbers, which with the juicy flesh of their fruit prevent the seeds from shrivelling up.[1] The exudation of resin of so many trees in these arid regions also serves them as a protection against pining away, and some plants screen themselves no less effectively by their exhalations of aromatic oils from minute glands of their epidermis, like our sage or balm mint, experiment having shown that this vaporous envelope checks the conversion of the sap of the plant into gaseous substance.

And how keen are the senses, how easily satisfied are the hosts of nimble animals reared by these arid lands! Burrowing rodents people the steppes in innumerable thousands, contentedly feeding on underground bits of roots and bulbs of the native plants, at the time when the burning sun has shrivelled every blade of grass and turned

[1] Similar plants in the llanos of Venezuela Humboldt calls ' vegetable springs.' [TR.]

it into tinder. The pretty bobac, related to the marmot of the South Russian steppes, often has for months no other refreshment than the morning dew on the blades of grass. In the brilliantly transparent, because vapourless, atmosphere the vulture describes on high his huge curves, dominating an incomparably wide horizon, and descrying his prey on the ground with such keenness of vision, that his eye may well be regarded as possessed of telescopic power. The little fennec-fox of the Sahara, with its broad, three-cornered ears, rising high above the sharply pointed little head, catches the most distant sound, and, like the wild camel of the basin of the Tarim, its cryptic colouring is adapted, almost beyond detection, to the soil of the country, being in the one case greyish yellow, in the other somewhat more reddish. Camels, horses, antelopes, and ostriches show their adaptation to the dry climate primarily by the speed with which they cross their waterless regions, and partly also by their power to dispense with water for a marvellously long time. The two-humped camel carries in the severest winter hundredweights of tea through the Gobi Desert, even if kept for ten days without food, and only able to slake its thirst occasionally by licking up some snow. The camel with one hump is able to dispense with drinking for five days, in spite of the glowing heat of the Arabian

Desert ; nay, in spring, when the warm rains supply a sufficiency of *hashich* (green fodder), it can do without water for more than three weeks.

How then can man, as an inhabitant of these dry regions, fail to exhibit their imprint ? Let us turn our survey to the East, that East, properly so called, which looked at (say) from Rome constituted the Eastern edge of the geographic horizon of the ancients, viz. from Palestine to the Punjab, including all that is similar in nature and belongs to it both in Arabia and North Africa. This forms the mightiest girdle of steppes and deserts of the whole world. It begins with the Sahara at the Atlantic, and stretches eastwards as far as the home of the Kirghiz, and the Central Asian border of Siberia, Manchuria, and China. The well-known characteristics of oriental life are, as a rule, ascribed to Islam, as if the injunctions of the Koran were the father and not the offspring of the deserts of Arabia. And if, on investigation, it is seen that these eastern customs reach back to times long anterior to Mohammed at least indeed to Abraham, then we ascribe it all to the innate habits of thought of the Orientals. This, though convenient enough, is not altogether satisfactory, for it is the function of science to track to their source those habits which play so prominent a rôle in the lives of nations. But seeing

that Syrians and Persians, Arabs and Turks, men of such different races as Semites, Indo-Germans and Mongols, have adopted modes of life similar in their fundamental features, then nothing is *à priori* more probable than that their manners and morals were assimilated when they came to inhabit similar arid regions. This probability rises into a certainty when we observe the same characteristics among both Australians and the Prairie-Indians and among Patagonians and Hottentots, who have never come in contact with Orientals, but, like them, inhabit open treeless plains scantily watered.

Considering first their physical peculiarities we notice that the dry atmosphere acts absorbingly on the moisture of the body. Men living in, and much exposed to it, grow lean, sinewy, with tense muscles, forming hardly any fat. A notable exception to this are the Kalmuck priests, who are wont to spend the whole day squatting lazily in their tents and become paragons of obesity. The glaring light of the shadowless and dry air tans the skin like that of the shepherds of the Hungarian pusstas, of the herdsmen of the Pontic-Caspian plains of Southern Russia, and of the Gauchos of the South American pampas. The skin easily splits in dry air, and as a protection against these painful rents the ancient Greeks, scantily clothed moreover, anointed themselves with olive oil ; the shepherd of the pussta rubs

himself with lard, and suspends his shaggy sheepskin on his shepherd's crook as a protection against the wind ; the bushman insinuates himself snake-fashion for his night's rest into a shallow hole in the ground, where he had previously roasted, with skin and hair, a little hare, captured by good luck, and equips himself in the morning for his further wanderings by coating his bare skin with a crust of the ashes soaked with animal fat, and this constitutes his only clothing. Bushmen and Hottentots are especially distinguished by their dry, easily wrinkled skin, so that even in youth they look morose, especially as in the blazing light, all round them, they have to blink and squeeze their eyes together as we do when we step suddenly out of the dark into the full light of day. What a contrast between these narrow, almond-shaped eyes of the man of the Kalahari Desert and the wide, open eyes of the negro !

Eudiometric measurements of samples of air taken in the Lybian Desert prove that the atmosphere of those arid regions contains a large proportion of ozone. The restorative power of a dry climate, and, no doubt, the vivifying effect produced by the air of the Sahara, for example, on the European traveller, is presumably due to the destruction of microbes, especially of the bacilli of tuberculosis, by the ozone. As long as the inhabitants of steppes and deserts

breathe their free air so rich in ozone, they are unacquainted with the destroying angel of phthisis ; but this disease made its sorrow-laden appearance in the prairies of North America since cities were founded in these once wholesome regions.

As enviable as their health is also the acuteness of the senses of these nations. It has been bred tellurically in every man by the necessity of descrying his prey in hunting or marauding expeditions ; and the endeavour to save his life by tracking his way home through the desolate, lonesome plain sharpens all his senses in the arduous, daily struggle for existence.

His ear catches the feeblest sound-waves, of which our dull organ is wholly unaware. When Australian blacks, travelling in opposite directions, meet they continue their conversation for a considerable time after having passed each other, and the European fellow-traveller fancies that he is listening to a soliloquy. The Kalmuck considers about five hundred yards or so a fair distance, from which human speech can be heard without the voice being raised. Hence the strange practice of Kirghiz mothers to widen the ear-shell (*concha auris*) of their children, so as to fit them for their mode of life by their increased power to catch sound-waves. By the sense of smell these men follow the track of human beings and of animals, even if no trace is left on the bare rock, and

occasionally also after the lapse of some days. The Aimara Indians find their way back to the camp in a dark night merely by the scent of the fields, which to the duller sense of the European is wholly imperceptible. The English police of Australia readily employs the natives on account of their keen sense of smell, which enables them to pursue the track of men and animals on a rocky, trackless soil for days after the sheep-stealer has hurried over the ground. Just as the cattle of the South-Russian steppes scent water from afar, so the Arab of the Great Desert climbs at the end of his caravan journey longingly the summit of a hill, turns his face eastwards, and, greedily snuffing the air, exclaims exultingly: 'I smell the Nile'. He has discovered the river before he got sight of it. But the acuteness of their vision fills us with still greater amazement. The human eye is admittedly an organ capable of indefinite adaptation, and the greater power of seeing at long distances can be developed only in an unobstructed horizon with a transparent atmosphere, such as is enjoyed by the chamois hunter of the Alps and the inhabitants of deserts and steppes. The latter especially learnt, in the incessant struggle for existence, fully to dominate with his falcon-eye the widest of all possible horizons, and this wondrous power of his was inherited and intensified from generation to

generation. Thus it has come about that these arid regions are, through all the continents, the nurseries of men with the keenest power of vision. A young bushman, who accompanied Liechtenstein on his return journey from the Cape, descried antelopes no bigger than a goat at a distance of several leagues from the coast of Africa, which Liechtenstein could only verify with the telescope. The Targi of the Western Sahara is able to count the number of camels of a caravan, which has just risen above the horizon, where the unarmed eye of the white man perceives absolutely nothing. The Australian native pursues with his eye the tiny bee of his country, no bigger than our house-fly, through the obscurity of a leafy tree-top, so as to possess himself of its wild honey. But the greatest recorded triumph of keen sight is probably the achievement of a horse-tending Kalmuck on the Cis-Caucasian steppe, who forewarned the Russians of a sudden attack, having perceived the dust of an approaching army of the enemy at a distance of no less than nineteen English miles!

The nomadic life of man, which is so ancient as to lead us back to the remotest antiquity, still exists in the steppes and in the deserts, because there man still enjoys the most cherished of human privileges: perfect, golden freedom without the necessity of having to toil for his living, under the eye

of a master, with hoe or plough. These unsettled wanderers have at all times looked with the scorn of a barbaric hero upon men tied to a fixed home, which they can dispense with, if they are able and willing heroically to march long distances, to fight bravely, and to endure indigence and occasionally even protracted privation of food and drink. So the Bedouins of the desert despise the well-fed farmers on the Arabian coasts, who, in their estimation, are only fit to be raided upon, if not to be permanently enslaved. In a similar manner the freedom-loving Turkish Osbegs of the Turan bore themselves proudly, up to the moment of the Russian occupation, towards the Persian settlers in the river-provinces, and even when they temporarily dwelt among the farmers, they preferred to pitch their felt tent in the open farmyard rather than seeking a coward's shelter within the clay walls of the house.

The blacks of Australia still adhere to their habitual life of homeless wanderers, such as was necessitated by the all but total want of edible vegetation, the lack of milk-yielding mammals, and the scanty produce of the hunt in the arid wastes of their country. Even after the Europeans had successfully introduced the vegetation and domestic animals of our farms, the Australian native still clings to his former life, free from all restraint, in spite of all its privations due

to the scanty pittance of crumbs picked up at the ill-provided table of the wilderness. In their daily wanderings the men make wide détours in search, may be, of a herd of kangaroos, or in the hope of fetching down a bird with the boomerang, or of plundering the nest-mound of the brush-turkey. Meanwhile, the women, laden with their children and their paltry cooking utensils, take a short cut to the nearest waterhole which has still some water left. On the way there they dig for edible roots, collect some wild honey, or tree gum, or repulsive worms, to satisfy their own and their children's cravings of hunger. In the evening, having arrived at the muddy well, the fire is lighted with the help of the glimmering log of wood that has also been carried during the burning heat of the day, there being no time for the lengthy process of lighting the fire by rubbing sticks of wood together, lest the impatient husband, angered by the delay, should cause his long wanderer's staff to descend ungently on the head of his devoted wife.

In Africa, which is so rich in game, even the bushman does not confine himself to collecting scraps of food, but is a huntsman, expert in the use of the bow. No country in the world is, in fact, so abounding in game that the huntsman, who lives by the chase, is spared the trouble of going in search of his prey. In steppes, with too scanty a rainfall and consequent insufficient pasture, or in

those regions where the ground is covered with snow the whole winter and the sheep have to pass the inclement season in the neighbouring lowlands, the shepherd too has to lead the life of a nomad. On the other hand, oases, and rivers that flow through arid lands, such as the Nubian-Egyptian Nile, the only river that crosses the whole breadth of the Sahara, attract permanent settlers, because springs and rivers supply the water that is required for artificial irrigation in places or at times where not a drop of rain falls. It was for this reason that Zoroaster became so great a benefactor to the inhabitants of the parched lands of Iran and Turan, for by his doctrine he sanctified works of irrigation, to which the otherwise barren soil owes its exuberant fertility in fruits of the field and of the orchard.

Steppes with a rainfall sufficiently copious to reward the cultivation of the ground without the necessity of having recourse to artificial irrigation have from of old, and mostly so in modern days, become the homes of settled communities ; be it that agricultural tribes found the land unoccupied, or that they took possession of it in accordance with the righteous arbitrament of telluric selection that every country belongs to him who can best exploit it, and is best able to defend it [1]. The English wheat growers

[1] But these two qualifications are a team that

and sheep breeders are pressing forward ever deeper into the interior of Australia; the Boers expelled both Hottentots and Kaffirs; the prairies, where till lately the red-man hunted innumerable herds of buffaloes, now wave like the pampas of the Argentine Republic with endless cornfields. Where in ancient times Scythian Scolotae, and Sauromatae wandered with their herds through the steppes of South-Eastern Europe, the Russian farmer has made permanent settlements. And just there, close to the Southern Ural, we are witnessing a most instructive displacement of roamers by permanent settlers. The Bashkirs are most reluctant to abandon their roaming life in the steppe, but being hemmed in from the east by the forests of the Ural, from the south by the wastes of the Caspian salt-steppes, and from the north and west by the insidi-

does not always run well in harness. No nation of antiquity exploited its country better than the countrymen of Hamilcar and Hannibal: as merchants their ability has never been disputed or surpassed; as mariners their hardihood and perseverance fills even us moderns with admiration, and as cultivators of the ground they served as a model to their deadly foe, the Romans, who caused a Carthaginian work on agriculture to be translated into Latin for the instruction of their own countrymen. Nevertheless Rome, overmighty, and brutally ruthless, destroyed that noble race and its unique civilization, reduced the country to a wilderness, and inflicted a deplorable and irretrievable loss on the human race. No; ability to exploit and power to defend are not always found together. [Tr.]

ous advance of the Russian peasant, they feel themselves powerless to live solely by the yield of their herds fed on the grass of the steppes, and farm out their lands to the Russian peasants at a rent paid in corn, and thus secure to themselves a short respite for the retention of the unfettered freedom of the nomad. But their fate is sealed, for living on pasture in the Bashkir steppes requires some seventy-five acres per man, whilst the agriculturist only needs twelve to eighteen acres. The same area which supplies one single Bashkir with a sufficiency of milk and meat gives sustenance to from four to six Russians.

But wherever the restless nomadic life prevails, there also custom and usage remain practically unchanged [1]. It is only lately that the building of lines of railway has brought about a complete reversal of traffic in scattered places of the true deserts. Elsewhere, as of old, man wanders with his flocks from well to well ; as shepherd if, in a favourable season, the earth is clothed with temporary verdure ; at other times as leader of a caravan, or as huntsman, or as robber lying in ambush. Deserts breed robber communities, being naturally poor, except in those places where, as in the Atacama Desert, the soil yields rock-salt or

[1] One remarkable exception has, however, universally taken place. Since the discovery of America nomads are as inveterate smokers as settlers. [Tr.]

saltpetre. Often there are fertile lands on both sides of the desert, as, for example, the Mediterranean coast-land to the north and the Soudan to the south of the Sahara. These regions send their goods to each other right across the desert in long trains, and spring and river oases act enticingly with their date-groves and field fruits of every kind. But the man of the steppe or of the desert craves for the addition of meal or fruit to the wearying monotony of his animal food. No wonder then that, with his superior knowledge of the country, which is as useful to him for advance as for retreat, with his great bodily strength and flying speed with horse and camel, he does occasionally indulge in a little marauding. Hence every inhabited spot in the oasis is girdled with a clay wall.

Living the life of wanderers on an arid plain begets a multitude of habits, both very different from those of men in settled homes and less liable to change, because they are ordained by an inexorable necessity. In the Syro-Arabian Desert the traveller feels himself transported to the times of the patriarchs of Israel. Wealth consists, as in the times of Abraham, of cattle and silver ornaments, of weapons and carpets. Besides the indispensable tent, the poles and hair-cloths of which the beasts of burden have to carry when on the march, all other furniture is restricted to a minimum. Tables,

chairs, bedsteads must be dispensed with. On the floor they squat down and they sleep ; on it the great dish with the simple food is placed upon the outspread carpet, and those squatting round it help themselves with their fingers as Christ and His disciples did, for the Israelites retained many of the customs of their old nomadic life. Even when settled in Palestine they still called their home ' Ohel ', which means tent. The household gear must be solid and strong, the chances of renewal by trade being few and far between : out of wooden bowls, strengthened, if possible, with metal hoops, the Mongol drinks his brothlike tea [1], thickened with meal and made palatable with an abundance of mutton fat. Woman's position is inferior to that of the man ; she performs meaner service, and is not admitted to the table of the men. When the tent is put up in the evening the wife and the daughter betake themselves to the well to fetch water, and, to save those often lengthy journeys, the earthenware pitcher is capacious, and can consequently only be carried on the head or on the shoulder, compelling an upright posture of the body. The picture of Rebecca at the well can be seen in the East a hundred times every evening. The combination of grace and strength is a perpetual charm to the beholder ; playfully she lifts the heavy pitcher, and carries it

[1] Made from a lump of brick-tea. [Tr.]

away with elastic steps. Wetzstein encountered, in the middle of the desolate Syrian Desert, a Bedouin woman carrying water on her head and in her arm a new-born baby, to which she had given birth on the way. The Indian woman on the prairie is also at times surprised by the pains of childbirth on her ride through the silent grassy plain; she then binds her horse to some solitary tree trunk, and after a few hours' rest she bravely remounts her horse with the new-born babe in her arm.

Bodily endurance and sturdiness have been bred into those nomads by kiliads of their 'struggle for existence'. The Patagonians, no doubt the most long-legged race of men on earth, take walks of forty miles as a pleasant exercise. The Tubu [1] negro performs his heroic march through the desert on the meagre day's ration of a few dates; in an extreme case he extracts a few drops of blood from the temple of his camel, and with it, and some pulverized bones of men or camels bleaching in the desert, he makes a sort of paste to stay the cravings of hunger. If he can lie still in the shade during the day and travel only at night on his patient animal, then he can dispense with water for four days, and in the last resort he ties himself, weary unto death, to his camel, and trusts for his rescue to the keener scent of the animal. The Kalmuck can, when

[1] Of the Central Soudan and Chad basin.

travelling in the caravan, endure hunger and thirst for three days, and if then he still finds no water, he pulls out some hairs from the mane of his horse and munches them. The power of long abstinence from food, combined with great voracity, are characteristic both of the huntsman, who, after long protracted privation, secures by a lucky shot a great superabundance of food, and of the nomadic shepherd, who, after the sufferings during the day's march, finds rest and food late in the evening. The Mongol can go without food for several days together, but regards in ordinary times a quarter of a sheep as the usual day's ration of a man. At a festive banquet he can manage unaided to consume in one day a whole sheep of average size. Nevertheless these races consider it unworthy of a man to indulge too much in the pleasure of eating. On warlike expeditions the Kalmuck is content with a few morsels of meat, or he munches a bit of roasted skin of an animal; on the day of battle he restricts himself to drinking some beef-broth. The Indian of the steppes of North America refrains from overeating, even when his stores are full, so as to be in training for manful deeds in sport or in serious warfare. Indulgence in overeating he tolerates only in women, children, and dogs.

The nomad has much time left him for sport, in which he loves to display agility

joined to bodily strength. The boundless expanse of his country offers an inviting field for archery, or games at ball, the favourite pastime of the Tekke-Turcomans of Central Asia, the Dacotas of North and the Tehuel che of South America. Within the tent they abandon themselves to passionate dice playing; the Gaucho of the Argentine Republic is addicted to card playing, whilst the Arabs prefer, in the balmy evening air after the sun has set in the purple glow of the western sky, to listen to the rhapsodist or minstrel celebrating the glories of his tribe. The men excel in horsemanship and foot races; their women look on, stimulating by their cries, greeting the victor with shouts of exultation, and deploring the failure of their own kinsmen. These popular festivals are very useful, as the spur of personal ambition fosters the growth of those virtues which are indispensable to their national existence. It was the Cossack from the grassy plains of Southern Russia who introduced the foolhardy performances of their rough-riders into the regiments of Russian cavalry. Among the Bashkirs of Eastern Turkestan even dignified priests take pleasure in speeding along at full gallop and picking up a stone from the ground without losing their foothold on the stirrup. The Turcomans run foot races over a course of 100 miles, and award to the chief winner the considerable prize of twelve camels.

But the most striking and picturesque spectacle is to be witnessed in the Syro-Arabian Desert at races or at a hunt with falcons, either on herons or on the gazelles of the Hauron. Then the Bedouins' joy in hunting or riding breaks forth with unrestrained passion; like madmen they dash forward, and when the silver-white falcons are, on high, intermingled with the herons in an inextricable coil, they look up, quivering with excitement, expressed in every fibre of those bronze-faced men, who, in spite of their steely nerves, are highly nervous, as is so often the case with men living in a dry atmosphere of high electric tension.

We meet with some peculiarities among those races which are not due to the countries they inhabit, but are faithfully preserved from their former modes of life elsewhere, because with them the hands on the clock-face of culture move forward far more slowly than they do with us. Such, among other things, is the practice of seasoning their food with salt, which is not yet freely adopted. It may, of course, be asserted that the flesh and blood of the animals of the desert are already sufficiently salted from the food they live on, and, as a matter of fact, dried camel's flesh does taste of salt. The shrubs and the herbs of the rarely moistened soil, on the surface of which the evaporated drops of dew or rain leave as a lye a collection of saline particles, are often charged with

salt; consequently the Nama-Hottentot, digging for tubers or roots for his modest meal, is naturally nourished with food slightly more seasoned with salt than is the case with our bread or potatoes. Many races, however, which have not yet come into contact with our civilization, such as our protégés in New Guinea and the Caroline Isles, are innocent of the use of salt with their food. We are thus inclined to assume also of the nomad races that their abstention from salt is but a survival of those early days when man was content to satisfy his legitimate, ever-present craving for salt with the slight quantity naturally found in his food, whilst the additional amount of superfluous salt as a mere condiment, which to us is a necessity, was unknown to him.

Other habits the men of the desert have evidently contracted more or less directly in the lands they inhabit. They are fond, for example, of displaying their weapons so as to inspire terror and nip in the bud any hostile intentions against them. As they mostly travel along in open plains they carry arms, pre-eminently lances, gleaming from afar; thus the Kurds have lances with bamboo shafts eight to ten yards in length; the rifles of the Bedouins are the longest in the world, whilst the Tuareg, scorning fire-arms as the weapons of cowards, adhere to the spear and their antiquated cross-handled sword. And yet their treeless homes seem

to invite the use of firearms of long range. When the Huns, Avares, and Magyars first burst from their steppes in the East upon Central Europe, they terrified the ancestors of the modern Germans by the skilful use they made of bow and arrow in feigned flight. The Tubu hurls his weapon horizontally at his foe, and inflicts on him dangerous wounds, as with a jagged scythe with a handle of enormous length. The sling plays from of old in the deserts of the eastern hemisphere a rôle similar to that played in the western hemisphere by the lasso and the bola.

A happy invention, specially adapted to the nations of the Sahara, is the veil, their so-called litham. It is a shawl of blue calico, so wound round the head as to leave only a narrow slit open for the eyes. As we, by the use of the *cache-nez*, supply ourselves in winter with warmth from our own breath, so does the Tuareg and the Tubu breathe the parching air of the desert after it has passed through the litham, which is charged with the moisture which his own breathing has supplied. The Arabs do not seem to be acquainted with any similar protection, but are wont, when the hot, sand-laden simoom sweeps over the plain, to wrap the tip of their cloak round the nose and the mouth so as to moisten the air and keep out the sand.

Many tribes keep their head covered as a

protection against sudden changes of temperature and often also against the rain. The Kirghese wears an embroidered, many-coloured little cap, the Iranian a tall, black hat of lamb's skin, and other Orientals don a turban-like headdress or fez. The Hottentot woman puts on a fur cap, and considers it indecent to doff this headgear in public, just as Orientals never uncover before a superior, and still less in a place of worship, where, on the contrary, he takes off his shoes or sandals. To paint Christ bareheaded is quite unhistorical. The thick burnus worn by the Kabyles of North Africa and by the Bedouins is a bad conductor of heat, and therefore an equally good protection against the burning heat of the day as against the cold of the night. Breeches are only worn in those steppes and deserts which have severe winters, like the prairies, or Patagonia, or Central Asia; Mongols indeed wear them only in winter. High boots are a favourite addition to the costume of both sexes of those races which are much given to riding on horseback. Among the eastern Turkestans, the Tanguts of Lake Kuku-Nor, girls and women bestride the horse after the fashion of men. The Tehuel-che put on goloshes over their high riding-boots as a further protection against the wet of the melting snow. The rocky or sandy soil of the desert, heated to about 160° F., blisters the bare feet of the traveller,

and necessitates the use of sandals or shoes made of camel's skin; nevertheless the thrifty Tubu ties, whenever he can, his sandals to the spear over his shoulders, and strides with a light foot unscathed over the glowing surface, without cutting the horny soles of his feet with the sharp-edged stones that cut the boots of the European traveller into shreds.

The prevailing scarcity of water has had on different races diametrically opposite effects. To the Arab the sight of large masses of fresh water is a source of keen, longed-for delight, and the gurgling noise of a well the sweetest music; a springing fountain is the chief ornament in the centre of the garden in his inner court; paradise itself is to him inconceivable without bubbling wells and the shade of trees. In Central Asia, on the contrary, the scarcity of flowing water has engendered a perfect detestation of cold water. The Mongol never pitches his tent near water, much as he needs it for himself and his animals; he drinks no water that has not been previously boiled, and to see a stranger eating a wild duck, a creature living in the water, fills him with loathing. The Chinese probably entered China originally from the Takla-Makan Desert of Central Asia, and this is doubtlessly the reason why they drink none but boiled water. They thus became the inventors of the decoction of tea, and it may

be permitted to assert that we drink tea because the Chinese trace their descent to Central Asia.

Where water is so precious people do not lightly use it for washing, and therefore they are positively caked with dirt. Herodotus says of the Scoloti that 'they never wash', which is still true of the modern Mongols, who are even proud of it, and call themselves *kara hunn*, or black men. The women of the Scoloti are wont, for personal adornment, to besmear themselves overnight with a paste prepared from pulverized particles of fragrant wood, so as to present themselves in the morning as sweetly scented charmers; occasionally even without the crust of dirt on their face. This reminds us also of the taste for delicate scents prevailing amongst ourselves too, acquired obviously in our former homes. It has already been mentioned above that aromatic shrubs are more commonly the natural products of dry regions than of other lands. Arabia (*anglicé*, the desert land) has from of old been famous for its spices. The tribes then of steppes and deserts, being saluted on all sides by delicate scents, have grown passionately fond of them, and ascribe the same taste to their gods. Perfuming was taught us by the Orientals. Mahomet always carried about him a box of perfumes, a snuff-box as we might say. When the brown Nubian woman wants to bewitch her husband, she

soakes herself in fumes from glowing aromatic substances. The heaviest item of expenditure in King Solomon's temple was the burning of myrrh and incense, so as to send most precious scents ('sweet savours') aloft to Jehovah's heaven; similarly the Tartars of Asia were wont in the middle ages to offer finely scented sacrifices to their gods, and the Indians of the prairies waft sacrifices of scented sage to their 'Great Spirit' on high. The fumes of incense in the Christian churches direct us geographically to the East as the source of our common Christianity.

A certain strain of melancholy is common to all these races, corresponding, no doubt, to the silent, monotonous solitudes of their homes. In those regions where, as in Tibesti, in the Tubuland, the niggardly soil yields, even in the neighbourhood of wells and springs, only scanty crops of dates or of stone-hard palm fruits, that can hardly be made soft by much pounding, the joyless gravity of life deepens into intense gloom, and renders the hearts of men as hard as the stones of their deserts. And yet, in other respects, the meanest tent of nomads is glorified by the ancient, hereditary custom of open hospitality, which is held in honour even by robbers and freebooters. Their honest and chivalrous character is as yet uncorrupted by the sensuous seductions of civilization. 'Greek faith' is a satire, but 'Turkish honesty' a fact. Sobriety steels

body and mind, and this was one of the forces (and not the least) that led the armies of the Caliphs and the Osmanli from victory to victory. The vegetation of the arid lands yields but a scanty supply of sugar needful for the manufacture of intoxicating drink, and hence the detestation of those races of the repulsive vice of drunkenness, and their ingrained scorn of such effeminacy as craves for other satisfaction than the wholesome ancient beverage of milk or water, or at best of the warm refreshment of tea or coffee, and instead thereof get drunk like the despised slaves of the plough. With all the pride of the nomad the Koran says: 'The Angel of God never enters a house under the roof of which a plough is found'. Mahomet did not create the detestation of drunkenness; he only described it and many other pre-existing customs of the desert as having sprung from the injunctions of Allah's sacred commandments.

Men that inhabit woodland, and seafaring races also, are usually polytheistic, whilst monotheism is the natural product of the desert. From Sinai, from Palestine, and from Arabia the world received the three monotheistic religions, the doctrine of a 'single God'. As though he were a prophet of the Old Covenant, Djenghis Khan ordains: 'Thou shalt believe in the single God, the Lord of life and death'. In like

manner the Mandan-Indian of the prairie conceives the 'Great Spirit that lives in heaven'. We all retire into solitude when we long for composure and contemplation. This it was that led John the Baptist and Christ into the desert of the Jordan, and Mahomet into the desert cliffs near Mecca. The solemn silence of the desert fills the musing heart of man with few but powerful impressions. Over the whole expanse of the wide, rigid plain the eye beholds but one uniform calm motion, that of the constellations. Not the hand of man does guide them, but a superhuman, single power. What the law of gravitation is to the student of nature that is to the childlike mind the belief in the only God, 'who leads the stars in the heavenly vault', who rules the universe, who moves wrathfully along in the storm, and hurls destructive flashes upon the earth, and causes again His beneficent sun to smile over the just and the unjust.

To the delight of the Orientals in listening to thoughtful speech, not merely in the tent at the repose of evening, but by day too, couched, let us say, on the green turf by the lake of Gennesareth, we are indebted to the Sermon on the Mount; to it is due the possibility of making the loftiest aspirations of man a common possession of the people; to it also are due the religions that give hope and solace to suffering humanity.

IV
THE INFLUENCE OF MAN ON THE LANDSCAPE

IV

THE INFLUENCE OF MAN ON THE LANDSCAPE

During the last thirty years the scientific study of geography has succeeded in gaining acceptance all over Germany as one of the recognized scientific subjects at the universities. The methods of this science, and its lines of demarcation from other branches of study, have been investigated; but there was at one time serious danger of its being diverted from its true course. Karl Ritter's monumental work, *Geography in its Relation to Nature and to History*, had, as its title indicates, dwelt upon the twofold aspect of geography, the physical and the historical, just as Strabo had done eighteen centuries ago in regard to the narrower circle of ancient knowledge. But for this book it is probable that during the interregnum of geographical study that ensued on the deaths of Humbold and Ritter in 1859, many of the younger men of Ritter's school would have allowed the historical side of the science to obtain undue preponderance, and that in the consequent reaction a treatment of geography from a standpoint exclusively physical would have been

carried to the opposite extreme, considering that George Gerland had actually given utterance to the dictum that geography is purely a branch of natural science, and that the works of man should not be allowed to intrude into it, as they belong peculiarly to the study of history.

It may indeed be considered a piece of good fortune that this revolutionary watchword, which is somewhat alluring at first sight, and comes from considerations of a serious and methodical character, met with no general acceptance in Germany, and in consequence, as we may add with some pride, it was also rejected by the rest of the world. Even our leading geographer, F. von Richthofen, under whose banner geology attained its proper position as the foundation of the study of the earth, declared himself unreservedly against the exclusion of man from geography.

It is true that Gerland was completely in the right in his warning that the scientific study of the earth loses as it were the purity of its methods, which have to reckon solely with the forces and laws of nature, so soon as it draws man into its province; for human will unavoidably enters into consideration at the same time, and it is necessary to operate at one time with the methods of the physicist, at another with those of the historian, and now again with those of the political economist. But does not this lie

at the very foundation of the peculiar nature of geography ? It was not by accident that the great master Ritter claimed for it a central position among the different branches of natural science and history. If the earth were nothing but a physical object, geography would of course be purely natural science ; but as we can picture to ourselves no part of that quarter of the earth which consists of land without recognizing the traces of man deeply imprinted upon it, the final arbitrament holds good that while geography is essentially a branch of natural science, historical elements form an integral part of it.

Even the ocean is now interwoven with the doings of men. Were man's hand to be removed, the various seas would no longer be regions of busy life, bearing the flags of all the seafaring nations, binding the whole economy of our race into one organic whole with its arterial system, and performing its beneficent service without intermission. In the absence of man they would relapse into their old condition when inhabited by the ichthyosaurus and plesiosaurus of the Jurassic period, of desolate wastes in which in place of ships only the cold tracks of icebergs were to be seen.

It is indeed true that the meeting waves obliterate the wake left by the keel of the stately merchantman or the mighty iron-clad. Perceptible as are in general the

operations of trade in the veins and arteries of the great sea routes, in which the ships represent the corpuscles of the blood, yet these routes themselves remain invisible, except where they are shown by the cartographer as lines upon his maps of the world. Far otherwise is it with the network of lines of intercourse on land. What a measure of the state of civilization of the people of a country is supplied by the size of the meshes of this net, by the goodness of the roads, by the number of the railways and canals! What a contrast is afforded by these pictures of traffic—these land roads and water roads, swarming with human life and all converging to one point, such as we see every day in the neighbourhood of our centres of trade and industry—to the winding and well-worn paths through the boundless grassy plains of tropical Africa, where caravans of negroes carry bales of wretched goods in single file, or to the primeval forests of the Amazon, where now, as in hoar antiquity, the brown hunter has to break a way through the underwood with wearisome and ever renewed labour!

The higher the economical condition of a people, and the larger its population, the more various is the reflection of its influence on the face of the land it inhabits, until at last little remains of its original features besides the relief of the ground. The most magnificent spectacle in the way of the

sudden conversion of wilderness into cultivated land is presented by North America and Australia during recent times. So late as the last century the great quadrangle at present forming the United States of America consisted, as regards its eastern third reaching to the Mississippi, of splendid forests rustling with varied foliage; the middle third, a plain which rises gradually to the elevated foot of the Rocky Mountains, spread out like a sea of waving grass that served only for game, and re-echoed to the thundering hoofs of thousands of buffaloes; then came a bare upland desert, the site of undiscovered treasures of gold and silver; then the Pacific coast ranges, with the gigantic mammoth trees; and lastly, the glorious bay of the Golden Gate, as yet devoid of life. The forest has been reduced to a fourth of its former extent, occupying much the same proportion of the country as in Germany. The prairies wave with golden corn in place of the grass, and ground which was a barren waste holds the largest fields of cotton in the world. Iron, coal, and petroleum are obtained from the numberless mines and oil-wells of the Alleghanies, while forests of smoking chimneys indicate the site of manufacturing centres. The giant river in the middle of the continent has been reduced to obedience, and bears to the sea steamers of the largest size, while the valley of the Mississippi is connected

with the Atlantic coast and with the Canadian lakes by a magnificent network of railways and canals. Chicago has grown to be a city of over a million of inhabitants, a seaport with world-wide commerce in the very middle of a continent. Even in the hunting grounds of the Indians of the Far-West, which formerly lay in the silence of death, is heard the shrill whistle of the steam-engine upon that iron road across the continent, welding together in economic bonds the Atlantic and Pacific sea-boards, which before were almost complete strangers. The white limestone desert around the salt lake of Utah has been changed into a garden by artificial irrigation. Nevada and Colorado maintain their millions, where of old a tribe or two of scalp-hunting redskins scarcely succeeded in dragging out a miserable existence. In fifty years San Francisco has risen from nothing to be the proud queen of the west coast, no mean rival of New York[1]; while the latter, situated at the mouth of the Hudson, on the site of a hamlet of Indian wigwams, is the mercantile ruler of the east coast, and is after London the most populous city in the world.

Even more rapidly, for it only dates from 1788, has Australia been converted by English energy from a God-forgotten, poverty stricken abode of hunger and thirst—without

[1] Whilst this was going through the press the world was horrified by the news of the total destruction of San Francisco by earthquake.

a blade of corn, without fruit trees or cattle, even without game, but for some scattered herds of kangaroos—to an enviable mine of wealth in all the three kingdoms of nature. The ancient theory, according to which all created things have been placed by the Creator where they flourish best, is quite out of date, being confuted by experience. All our grains and fruits, as well as our domestic animals, thrive exceedingly under the sky of Australia. In places where the Australian black-fellows could not find a drop of water to moisten the tongue, springs have been drawn from the rock by an art like that of Moses, or the rain-water from surrounding heights has been collected into cisterns cut deep in the rock, to water the enormous flocks of sheep, the fleeces of which develop silken softness in the dry climate of Australia. The squatters already draw from the backs of their sheep an income not only larger, but more to be depended on, than that of the gold-washer and the gold-digger. This single portion of the globe, which 120 years ago had not a town or even a village, is now sprinkled with flourishing cities, and Melbourne vies with, or even surpasses, San Francisco in the rapidity of its growth and the number of its inhabitants. This city, the metropolis of the southern hemisphere, has a population equal to that of Rome, and, thanks to its incomparable bay and harbour, is destined

to remain the trade centre of Australia long after the last vein of gold quartz in Victoria has been worked out.

The settler on the soil of America brought with him from Europe, in the first place, wheat and horses, then cattle, sheep, pigs, asses and goats, and from Asia he introduced coffee. In the same way the colonists have clothed Australia in a garment of cultivation practically quite European in character. Even our eastern continent has undergone changes of a similar character in the outward aspects of its cultivation. The importance of Java in the trade of the world rests almost entirely on products which were originally foreign to it. The cultivated portions of the island, the lowlying land at the foot of its Alpine volcanoes, and the lower slopes of its other mountains, are covered with an evergreen carpet, consisting partly of rice, which has grown there for centuries; partly of sugar canes from Hindustan, tobacco plants from Havannah, tea plants from Eastern Asia, coffee shrubs from Africa, and the splendid cinchona of Peru, whose bark yields the febrifuge, quinine.

Ceylon, next to Java the most productive island of Asia, has been despoiled at the hands of its English masters of the splendid clothing of primeval forests that covered its southern ranges. These have been replaced no less than twice in our own day, first by extensive coffee plantations, and secondly, in conse-

quence of the ravages of the coffee fungus, with equally extensive plantations of the tea plant. Who can picture the Sahara without the camel? and yet this animal, which seems, as it were, to have been specially created for the great desert, owes its introduction there to man. It is not to be found on the ancient Egyptian sculptures dating from the times of the Pharaohs; it seems to have been unknown to the Egyptians before the Ptolemaic era, and its introduction into the Sahara then, which brought about a revolution in the conditions of trade in North Africa, was only extended to the Soudan with the spread of Mohammedanism. Different religions have had their share in the transformation of the general aspect of countries by architectural additions. There are the mosques with their slender minarets; there are Chinese and Indian pagodas, and there are Buddhist monasteries, erected in obedience to a deep-seated impulse of the human heart on the pinnacles of the hills, where they are the most effective in their influence on the landscape, just as in the case of the Christian churches built to be the objects of pilgrimage, or the Christian monasteries of the East. What would the plains of the Lower Rhine be to us without the Cathedral of Cologne, or that of the Upper Rhine without the Minster of Strasburg? But in order to realize how the vegetation of a landscape may be influenced

by differences of religion, we have only to remember how vineyards have disappeared—even in Asia Minor, once so rich in wine—wherever Mohammed's puritanical command to abstain from wine has been made to prevail, whereas Christianity has encouraged the cultivation of the grape, if only for the supply of the chalice used in the ritual of the Communion service. The cultivation of the olive was inseparably connected with the worship of Athene, to whom it was sacred; the laurel accompanied the worship of Apollo as it spread itself round the shores of the Mediterranean. The services of certain monastic orders were highly beneficial during the middle ages in converting gloomy forests into bright and fruitful fields. We have before our eyes, as it were, the actual deeds under which such a transformation was brought about whenever we meet with evidence of the foundations of a Cistercian monastery in some particular locality. For, by the rules of the order, a monastery could only be founded in some place where barren wilderness presented the aspect it had worn in primeval times, and in such places permission was given to commence the clearing and draining preparatory to cultivation.

Where the Thuringian Railway now leads us so pleasantly through the green meadows of the valley of the Saale, and past the ruins of lofty castles near Schulpforta,[1] there

[1] The most renowned public school of Germany.

must have been in the twelfth century only a barrier of swamp across the valley, to avoid which the roadway was carried over the neighbouring ridges of hill, for it was then that the Cistercian monastery of Porta Coeli was established. A pretty historical discovery brings out the eminence of the old monks in horticulture. It was never understood why the Borsdorf apple, so widely esteemed in France, was called *pomme de porte*. We now know the reason. The industrious monks of Pforta had discovered a new and delicious variety of eating apple on their property at Borsdorf, near Karnburg on the Saale, and had distributed grafts of this to the brethren of their order all over Germany, and it is only the French who have happened to preserve—in the name *pomme de porte*, a name of which they did not themselves know the origin—a memorial of the fact that the red-cheeked Borsdorf apples are all derived from an original stock growing in a quiet monastery garden by the Saale.

The whole of Europe resembles an experimental garden, where useful species of plants and animals are raised in order to make systematic selection, and then introduce them throughout the other quarters of the globe in company with the streams of European colonists, naturalizing them in countries where the geological development had failed to do so. There is not a single portion of the globe that has not been laid

under contribution by Europe for animals and plants adapted to utility or ornament. Africa has given us the least, being only represented by the ornamental callas[1] and pelargoniums; Australia has sent us its eucalyptus, a valuable tree of rapid growth, which has worked wonders in the Pontine Marshes, in desiccating the soil and destroying the miasmata of fever by means of the energetic suction of its spreading roots. We have to thank America for the turkey, the tobacco plant, the maize, most of all for the potato, also for the foreign looking shapes seen in the Mediterranean lands, the agave and the prickly pear. Asia, however, by means of immigration of the nations and exchange of commodities, has given us the largest supply, closely united as it is to Europe by a broad stretch of land, and by the easy passage by sea over the Mediterranean. Every poultry yard harbours a colony of Asiatic birds, including not infrequently the peacock with its brilliant Indian colouring.

The introduction of wheat and barley from Asia goes back to prehistoric or perhaps early historic times. Then, but still in antiquity, followed walnuts and chestnuts, almonds, peaches, apricots and cherries, the last introduced by Lucullus. Northern Italy, formerly a marshy region of primeval forest with trees of purely European character, has become a splendid garden, where rice from Asia flourishes

[1] Or the Nile Lily.

beside maize from America, and where the silkworm from China employs thousands of busy hands. The grape, which in the land of the Po hangs so charmingly from elm to elm, may be considered indigenous to Europe.

The buffalo, however much he may now feel himself at home in the Danubian marshes of Rumania or the morasses along the Tyrrhenian shore, only reached us in the early middle ages, by means of nomadic tribes from Western Asia. The land, 'where the citrons bloom, and in the dark foliage the gold-oranges glow', was not yet Italy, even in the days of Caesar; and even the china orange, whose name betrays its origin, was only spread over the south of Europe through the trading voyages of the Portuguese in the sixteenth century.

But to realize the transformation of the landscape by the hand of man we need not even in spirit transport ourselves to the blue Mediterranean, to Sicily, the cherished home of Ceres, where men no longer gather, merely the wheat, wine and olives of antiquity, but where they freight whole ships with oranges from Palermo to North America and half of Europe, and where the opuntia has converted the lava of Etna into a fruitful soil, and has supplied the poor with a cheap refreshing fruit—no, our own fatherland reveals it to us impressively enough.

When Tacitus wrote his *Germania* there existed, it is true, cultivation of various kinds in the Roman provinces on the left

of the Rhine, on the Danube and the Inn, and even in the *Agri Decumani* between the Danube and the South German Rhine. The grape was already planted on the slate cliffs along the Mosel and the North German Rhine, boats laden with grain navigated the Danube and the Inn, though the cultivation of the soil was pretty much confined to the valleys, where the rivers had widened them, or formed a bright oasis in the gloom of the forest, perhaps surrounding some solitary Roman farmstead clinging to the slope of a sunny valley facing the south. There, to the south of the Danube and to the west of the Rhine, a lively trade was already carried along the Roman roads, solidly built for the firm tread of the legions. In the market of Augusta Vindelicorum, the modern Augsburg, people of most diverse races met together, speaking German, Celtic and Latin. Mayence was an important place of arms ; in the pleasant vale of Treves, with its vineyards and orchards, the Roman Emperors occasionally took up their abodes, in order, from a well defended position, to keep watch on the Rhine, the boundary of free Germany. This land of the free Germans lay still for the most part in the shadow of the forest, which was only interrupted by wide moors, and in some places by open meadow land, where the löss soil, easily exhausted of its moisture, was less favourable to the growth of trees than to that of grass

and herbs. There were no cities to be seen, scarcely even enclosed hamlets ; there were ordinarily only scattered blockhouses, surrounded by perhaps a field or two, with a few cows, sheep, or goats, and a grunting pig fed upon acorns, but no orchard. Crab apples and wild pears could be gathered in the neighbouring wood, where deciduous trees were mingled with conifers in picturesque medley. The beautiful yew was to be recognized from afar by its dark green top against the lighter green of the fir or the pine. Oaks and beeches predominated among those forest trees which are only green in summer, but limes were mingled with them, and there were towering silver firs on the heights of the mountains. The bear and the lynx lurked in the underwood, where the wild pigeon cooed and over which circled screeching birds of prey. The wolf went forth to his prey, the wild horse pastured in the meadow, wild boars ravaged the soil ; besides stag and roe were to be seen the elk, with its shovel-like horns, crushing through the branches and pushing aside the underwood to make himself a road. The aurochs, twin brother to the American bison, traversed the lowlands and mountain forests ; reindeer in larger herds cropped the grey patches on the soil of the forest ; beavers constructed their huts in the water by the marshy river banks, under the shadow of alders, ashes, and aspens.

To-day Tacitus would hardly recognize Germania. The German is no longer a mere hunter or cattle breeder, with a little occasional tillage; his far more intensive energy is devoted to agriculture and the cattle keeping intimately connected with it, to manufactures, to mining, to trade and commerce with foreign countries. The face of the country gives evidence of this, with its cultivated land embracing nearly half its extent, its rivers regulated for the use of man, its numerous cities, its chimneys and furnaces, its harbours on the sea and the river, its lighthouses and dykes along the sea-coast, its network of railways, the most comprehensive in Europe.

It is only approximately that some remains of the old German landscape still maintain themselves on the highest battlements of our mountains and on the moors, except where these have been subjected to the plough, or where the turf has been stripped off to the rock below to make room for some colony of fen dwellers who have pressed in along the canals. The primeval forest, where it has not been destroyed by axe or fire, has become an ordered plantation, an artificial wood, which contains in its monotonous regular enclosure such trees as grow most quickly and bring in the best profit. It is for this reason that the fir tree has gained predominance on our mountains, supplying the greater part of

our timber for building; even the proud silver firs, some patriarchs of which in the valley of Upper Schwarza may date back to the time of the Hohenstaufen, find no favour with the controllers of our forests, owing to their slowness of growth. We meet with the yew for the most part only, as a rare survival from early times, in localities difficult of access, such as the steep granite wall of the Harz, which descends to the plain from the Hexentanzplatz; it grows with extreme slowness, and, being much used on account of the excellence of its wood for carving, is becoming gradually extinct, both here and in Scandinavia. Reindeer and bison disappeared from Germany during the middle ages; the elk is still preserved in a forest or two of the extreme north-east of Prussia; the moderate-sized wild horse was last mentioned in the Thuringian Forest at the time of the Reformation. Wolf and bear were exterminated in the following centuries. A small colony of beavers lead a contemplative life on the Lower Mulde and in the neighbouring portion of the valley of the Elbe above Magdeburg. Elsewhere our waters are not sufficiently quiet for this remarkable rodent.

Our hasty review has shown that the transforming inroads of man upon wild nature have been effective, partly in altering the animal and vegetable world to suit its requirements, partly in the construction of

roads, canals, and buildings. In both directions the question of water and wood comes to the front, and we propose to spend a little time in considering each.

In the desert man creates a soil fit for cultivation, by means of artesian wells, which tap the supply of water slumbering in the depths of the earth; and soon he wanders under hedges of date-trees where otherwise he might have died from thirst.

In the amphibious marsh lands, on the other hand, the important matter is to get rid of the superfluity of water in order to obtain, among other things, the most productive soil. This was the case in Egypt. In the delta of the Nile it was impossible to live as a fisher, a hunter, or a herdsman: men could only be husbandmen; but this condition of life was one of great prosperity, accompanied by a large increase in population, leading to a division of labour and a high level of culture. In this way the ancient Egyptians built up their cultivated soil out of the mud of the Nile by means of drainage and embankments, and created one main source of the culture which subsequently spread through the world. The other main source leads us further off, into the land at the mouth of the Euphrates and Tigris. Here, in quite a similar way, the soil for cultivation was raised from the swampy delta of the twin streams through the civilization which had arisen at an astonish-

ingly early period. But the soil of the older part of the delta lying higher up the rivers was too high above the surface of the river, and was consequently not reached by the high water like that of the Nile in Egypt, and the water was raised by water engines and conducted along numerous canals, which served at the same time for navigation and for irrigation of the fields. It was this that stimulated the ancient Sumerian people and their successors, the Chaldeans, in the delta to far more laborious contrivances than that of the Egyptians. But just because this soil had no Nile to water and fertilize it every year, it lost its productiveness when the Islamite belief in kismet, a belief that kills all thought and effort, spread its pall over the country. Babylon has sunk to the condition of a desert; Birs Nimrod, the unique tower-like remnant of Babel, that greatest city of antiquity, gazes mournfully on a sunlit plain, now without water, that once maintained so many heathen nations. Here then the cultivation that has been dead for a thousand years waits for its resurrection till the right people shall come. More glorious still is the evidence of human power in the Netherlands, where to-day the victorious coast still speaks the truth in saying: 'The sea was created by God, the firm wall of the coast by the Batavi'. The Germans of the north-west, the Chauci, once eked out a

scarcely human existence, surrounded twice a day by the invading tide, and dwelling, like shipwrecked mariners, in tiny huts built on artificial hillocks, where now the golden reef of the dykes constructed by their descendants fosters in its bosom rich meadows and excellent arable land, while hundreds of canals, like those of Babylon, traverse the plain, blessing it with irrigation and drainage. The water has to be conducted to the sea artificially, as a quarter of the Netherlands, the whole space between the Zuyder Zee and the Scheld, lies below sea-level. The whole country is consequently genuine land of cultivation by its very origin ; it has not been improved by man, but created by him, having been torn from the clutches of the sea.

The Germans also, shoulder to shoulder with the Dutch, have constructed dykes against the inroads of the Baltic ; they have acquired water meadows below the sea-level at the Dollart, and gained other victories by ploughing the moorlands and draining the fens. Frederick the Great's drainage of the marshes along the Oder may stand beside that of the Haarlem Lake, which has in recent times yielded 45,000 acres of remarkably fruitful soil, and which supports 14,000 people in considerable prosperity. In the central ranges of Germany, access to which was in many cases rendered difficult by great bogs, the tapping of these has, it is

true, been prejudicial to the water power furnished by the streams fed by them, for they formed excellent reservoirs for the rain-water, storing up both that and the water from the snow even in times of drought and heat. Many of their mountain brooks that now trickle down through the rocky valleys as mere driblets used, some centuries ago, to drive the wheels of saw-mills within a short distance from their sources.

It is just in this question of water supply that they have to recognize the high importance of the forest. It is certainly not to be maintained that disafforesting must invariably tend to impoverish a country. This depends entirely upon its natural endowments. The British Islands have been made by their inhabitants the poorest in forests of all countries in Europe, and remain in spite of this among the richest in rain, because the south-west wind drives the rain-clouds to them from the Gulf Stream, whether these clouds encounter forests, Irish cattle pastures, or English cornfields and parks. In every forest land the first step in cultivation on the part of the settler is inevitably the clearing away of trees, for he wants open ground for building his house and for sowing his seeds. But woe to the nation which indiscriminately strips its new home of its woodland without understanding the special character of the locality.

Just as the Germans are now trying in S.-W. Africa to follow the example of the English in Australia, by carefully collecting in cisterns or reservoirs the stores of water which have hitherto run away uselessly, for the purpose of benefiting cattle raising or agriculture, so in the more happily endowed portions of the earth does Nature, the great mother, protect, with the green roofing of the woods, the water bestowed by Heaven as rain or snow from too rapid evaporation or from devastating mountain floods. France, and far worse still the southern countries round the Mediterranean, bear witness as to what happens when, in consequence of heedless devastation of the forests, the water no longer drops on mossy soil in the shady woods, to trickle afterwards along the roots of the trees and enrich the earth in thousands of tiny channels and give birth to springs. Where are the rivers of the Italian Peninsula which were navigable in the time of the Romans? In the south they have often become pernicious *Fiumari*, lying dry in the almost rainless summer-time, but in the torrents of winter rains tearing ever new and ever deeper channels in the bare walls of rock as with the claws of a monster, and hurrying away in their stormy course the crust of decomposed and crumbled soil so necessary for the growth of plants, with the sole result that the low places are rendered swampy

and the mouths of the rivers are blocked up.

It is the same thing with the land whilom flowing with milk and honey, the mere bog of dry bones called Palestine. The wealth of the soil, especially of the valuable red earth which results from the disintegration by rain of the chalky limestone of Palestine, and was preserved with the greatest economy in the terrace culture of the Israelites, has degenerated into mere stony desert, partly by the decline of fostering treatment of the soil, partly by the destruction of the evergreen oaks spoken of in the books of the Old Testament.

Countries are again and again found to be what their peoples have made of them. The appearance of the former gives unmistakable evidence of the degree of energy of the latter. Man is always striving to compel surrounding nature into his service, and to extend his lordship over the whole circle of the earth. Earth and water have from long ago been the footstools of his power, and they become more so day by day. From the mechanical force of the waterfall we get electric light and electric driving power for our machinery, and transmit them from the mountain to the plain. Here we transplant the mountain, as it were, there we tunnel under it ; we dig through masses of land, and bind together the seas with artificial waterways to suit the demands of

our trade. We even shorten distances on the earth by means of the railway and the steamboat, we annihilate them by means of the telegraph.

But it is not true to say that the progress of civilization liberates man from the influence of mother-earth : on the contrary, it is always knitting him with it more and more intimately and comprehensively. We feel ourselves ever more and more at home upon the earth, more and more fortunate in being able to turn to account its gifts and its forces, and yet it remains the fundamental basis of human activity.

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THE BRITISH ISLES AND BRITONS

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THE central part of North-Western Europe occupied down to the tertiary period a far larger area than it does at present, but its coast-lines were much less articulated ; the English Channel and the German Ocean had as yet no existence, and the European Continent comprised England, Scotland and Ireland, which were not yet submerged by the sea, and were continued in the form of a truncated wedge far into the North Atlantic Ocean. The river Seine continued its south-western [1] course far beyond its present mouth, along what is now the bottom of the English Channel, where submarine banks of fresh-water shells are still found in many places. The Rhine pursued its northward path along the floor of the present German Ocean, and received the Thames as a left-hand tributary. English fishermen not infrequently are still bringing up in their nets the bones of certain

[1] The Seine formerly pursued, along the floor of the present English Channel, a S.W. course, which was thus nearly at right angles to the present current .

diluvial mammals which, like the hippopotamus of the Nile, pastured on the grass and herbage of the then British coasts; but, these being subsequently buried beneath the silt, sand, and waves of the German Ocean, the place of those mammals is filled by a vigorous and abundant marine fauna.

Europe was already inhabited by man when, at the commencement of post-tertian times, there occurred two of the most momentous geological changes in its history. In the south-east took place the irruption of the Aegean Sea, which severed Europe from Asia Minor, and joined the Black Sea to the Mediterranean; and in the north-west an extensive subsidence of the land brought about the formation of the British Archipelago. How different would the history of Europe, and indeed of the whole human family, have been, had these two mighty geological revolutions not occurred. As late as the time of the glacial epoch, which lasted for several thousand years, and was probably due to a comparatively slight depression of temperature, that subsidence of the shallow sea bottom round the British Isles had not yet taken place; as yet there existed no German Ocean nor an Irish Sea: witness the present rubble of the moraines from the huge inland ice of Scandinavia in Caithness, Sutherland and the eastern coasts of England; also of moraine constituents from the Scottish highlands in

Antrim in the north-east of Ireland. When, at last, the terrible ice-crust of Scandinavia, which for aeons had covered central Europe, Denmark and Russia, and had reduced those lands into ice-clad deserts, gave way simultaneously with the retreat of the British glaciers, even then the land connexion of Great Britain and Ireland with the Continent must still have existed, as is evident from the identity of the fauna and flora of the British Isles with that of the neighbouring mainland: organisms which could not have found a home here previous to the disappearance of the all-enveloping ice-crust, nor could the immigration of the plants and animals of the neighbouring continent have taken place without the existence of at least an isthmus of some extent. When the last remnant of continental connexion had disappeared, and the isthmus of Dover-Calais had been turned into the present straits of that name, Ireland had already been severed from the main island, as is proved by the diminution of the fauna, which takes place when a former portion of a continent has been reduced to an island, because then any gaps in the animal population, caused by an epidemic or some other destructive agent, can only be filled by immigration through the water or the air. This scantiness of animal life being expressed far more strongly in Ireland than in Britain, it is inferred as at least highly probable that

the severance of Ireland from Britain is more ancient than that of Britain from the mainland.

Accordingly we see the ancient extent of our continent in the tertiary period only in maps of sea-soundings; there the shallows reveal the former sweep of our continent, comprising the British and the Shetland Isles as well as a large portion of the Bay of Biscay, and bordering on the deep submarine furrow that surrounds the south of Norway. All the submerged land has become a submarine base on which the central part of North-Western Europe rests, and which opposes the delicately articulated coasts of an archipelago to the foaming all-encircling breakers of a stormy ocean. These lands, so different from the neighbouring peninsulas of Western and North-Western Europe, Scandinavia and Iberia, formed an excellent mould in which to cast populations of peculiar national development.

As far as the coast-lines are concerned, this archipelago, and pre-eminently Great Britain, has, not inaptly, been compared with the similarly indented Balkan Peninsula. The homology of the alternately approaching and receding eastern and western coast-lines, in the one country as in the other, is nowhere on earth expressed as sharply and distinctly as just in these two countries; but with this great difference—the Balkan lands spread

out laterally in the north, Great Britain in the south; the broad, northern expansion of the Balkan Peninsula joins the mainland, and connects it intimately with the Continent, whilst the southern Hellenic part shares the characteristics of the neighbouring Mediterranean regions. Thus it came to pass that Hellenism, at the very time of its highest manifestation of energy, overflowed planlessly the western coasts of Asia Minor, southern Italy, Sicily, and finally all the coasts of the eastern Mediterranean, inclusive even of those of the Black Sea. No doubt the intimate affinities of all the Mediterranean lands formed a most valuable basis for the rapid spread of Hellenic culture, but the unfortunate absence of a wider tract of land in Greece prevented the growth of a homogeneous, firmly knitted, strong leading state that could unite the far scattered Hellenic communities. How different was the predestined fate of the British Isles! Like all other islands they enjoy the benefit of sharply defined boundaries in their coasts, combined with easy, intimate intercourse with each other by navigable seas, by proximity and by similar natural conditions; advantages which are not shared to a like extent by France or Holland, by Germany or the other countries washed by the northern seas. Under these circumstances a vigorous, homogeneous nation was formed, which spread itself, on the broad

expanse of their encircling seas, over the whole surface of the globe without severing the firm bond that tied them to the mother-country.

Many people have a false idea of the geographical position of Great Britain. Misled by the upward curves given to the parallels of latitude by the customary projection[1], they imagine it at a far higher latitude than it really has. Scotland, for example, appears far nearer to the upper edge of the map than Germany, and thus apparently at a much higher latitude ; but, as a matter of fact, the whole of England lies within the limits of German latitudes ; its south is on a level with Mayence or Prague, and even its most northern point, Berwick-on-Tweed, does not yet attain the latitude of Memel in eastern Prussia. The latitudes of Ireland are similar to those of the Netherlands and of the Prussian maritime provinces of the German Ocean ; Scotland lies under much the same parallels as Jutland and southern Sweden, and it is only the Shetlands that have latitudes slightly exceeding that of St. Petersburg.

It is somewhat inaccurate to say, as is usually done, that in its greatest length Great Britain has a meridional direction, for the longitudinal direction of Europe's largest island, measured from Beachy Head

[1] See chapter on Projections, pp. 116–34 in Sonnenschein and Kirchhoff's *School Geography*. [Tr.]

to Cape Wrath, cuts the meridian at an angle of 20° to the west ; in other words, it has a NNW. direction. Similarly, Ireland, measured from Mizen Head to Fair Head, has a NNE. direction, as the line of greatest length cuts the meridian at an angle of 30° towards the east.

The area of the whole of the British Archipelago does not exceed that of Norway, but whilst this latter northern country rises at a short distance from its shores into inhospitable, sparsely peopled mountain regions, the British Isles consist principally of plains, broken by a few scattered elevations of small extent. True, there are the compact masses of the Scotch and Welsh highlands, but they form, after all, but a small fraction of the whole area. If these elevated masses were all cut down and their substance spread evenly over the whole surface of the land, the average height thus obtained would nearly equal that of the German Empire, viz. a trifle over 200 metres (= about 650 feet). The summits of the mountains rarely attain the height of 1,000 metres (= 3,280 feet), excepting the Grampians, whose summits slightly rise above 1,300 metres (= 4,280 feet). It must not be imagined, however, that these isles have never possessed mountains of higher elevations, but the destructive agencies of winds and weather, of water and ice, together with the breakers of the sea, acted with special

violence, and have crumbled and worn away enormous masses of rocks. This is the classical soil of 'denundation', of laying bare extensive masses of rocks formerly hidden beneath the deep waters of the ocean. It was here that Ramsay, the keen-sighted geologist, as early as 1847, first expounded the theory of 'denudation' in his excellent work on the *Physical Geology and Geography of Great Britain.*

In the palaeozoic period the mountains of these regions had assumed the character of veritable Alpine chains, and their summits may well have risen into the blue ether to heights rivalling those of modern Switzerland or the Tyrol, so that geologists do not hesitate to speak of the whilom 'Caledonian Alps'. These have, however, long since been worn down into mere tablelands of no great height, and it is only the old crystalline rocks which were able to offer tenacious resistance to the destructive agencies of denudation; rocks that tower up in rounded domes like the imposing mass of Ben Nevis, high above the slate formations of the surrounding tablelands. These apparently level tracts betray their former origin as depositions beneath the sea, and their subsequent elevation into Alpine ranges, by their stratification, wherever it is laid bare in their valleys, scooped out either by the forces of nature or by the hand of man. Elsewhere in the island true mountain-ranges are

indeed met with, but they are of small extent and elevation, such as the mountains of southern Scotland, northern England and of Wales, in all of which we notice rounded summits, easy mountain-passes, and watersheds, often almost obliterated. In Ireland, above all, we meet with fragments of former ranges in the shape of isolated groups of mountains and hills of surpassing beauty. In their north-west these isles have been adorned with landscapes of rare sublimity in the brilliant columnar basalt formations, which, crossing over from the north-east of Ireland to Scotland and the Hebrides, stoutly defy the assaults of the boisterous, foaming breakers of the ocean. In perfect contrast to these tumultuous scenes, the British mountains exhibit landscapes of idyllic peace, wherever the placid, shining mirrors of inland lakes, small though they be, reflect the image of the hills, in the midst of which they are ensconced.

Not the coast-lines only, but the relief of the land also, and the distribution of fossil wealth, have split up these two islands into three communities. Ireland is an unbroken low lying plain edged by detached mountain masses of moderate height, closely united by means of the river Shannon. Disregarding the turf in the extensive moorlands, which are the product of pent-up, stagnant waters, Ireland is poor in

fossils. It is true that the Emerald Isle consists mostly of coal formations, but they are only, more is the pity ! the lower strata of mountain limestone, which are not carboniferous ; it is probable that at a former geological epoch the encroaching sea washed away the upper carboniferous strata, thus scraping off the butter from the bread of the luckless Irish before they were born. How different is the situation in Scotland ! Mountains and highlands traversing the country from coast to coast are built principally of metalliferous and carboniferous palaeozoic rocks. The remarkably narrow furrow-like depression of Glenmore, which divides the less richly endowed plateaux of central Scotland from those of the north, and rises barely 24 metres (= about 79 feet) above the level of the sea, is wholly innocent of mineral wealth. But the strata which extend northwards from the ranges of southern Scotland, and are continued beneath the soil of the lowlands, fill all the country between the two firths, and contain coal and iron ore in richest abundance.

If we cross the frontiers of Scotland into England, we come across a remarkable formation. A dividing line, drawn from Newcastle-on-Tyne to Nottingham and thence to Exeter, would split the country into a western and eastern section ; the former of which is filled with palaeozoic mountains abounding in great wealth of

many kinds of metal ores and coals, and the latter, consisting of gently undulating plains of mesozoic, tertiary, and post-tertiary formations, is rich in agricultural soil, with a total absence of the much coveted black diamonds [1]. The south-east of England is open country right down to the coast, with its steep, white cliffs, incessantly gnawed at and worn away by the boisterous waves of a stormy sea. The whole western section is intersected by the network of the most extensive river system of the island.

Its widest expanse is in the south-east, containing the basin of the Thames, the greatest watercourse of this system. It is a true type of all British rivers. with deltas buried beneath the surface of the sea at a great distance from the mouth. Of the existence of this delta we are informed by the sounding-lead, which shows the clearly marked furrows of the many-mouthed Thames of prehistoric days, whilst the estuary of the present river is free from all delta formations, to the great benefit of trade and navigation. It is the action of the sea which, by the double daily alternation of its tides, sweeps away the suspended matter brought down by the river. But for this action the masses would accumulate and gradually form a surface delta, to the detriment of navigation. Many of these

[1] The lately discovered coal-beds at Dover slightly modify this valuable generalization. [TR.]

British estuaries still convey the impression of river-beds, which, in consequence of the gradual subsidence of the land, gave access to the waters of the ocean, so that by the inflow of the tidal waves at high-water, even smaller rivers and tributaries are able to carry full-freighted ships far inland into the desired river harbour. But if this explanation of the uniformly single-mouthed estuaries of British rivers presupposes a widely prevalent secular subsidence of the soil, it by no means follows that this action, which if continued indefinitely would lead to the ultimate submergence of the whole archipelago, is still going on. On the contrary, there are numerous localities along the shores where we notice a recent, gradual, albeit slight, rising of the ground, indicated by former sea-beaches exactly parallel with the contemporary level of the sea.

The similarity of the watercourses of Britain has its counterpart in the universally prevailing similarity of its climate. No part of Europe receives as directly as the British Isles do the soft, moisture-laden air of the Gulf Stream. To it these islands owe the reduction of both the cold of winter and the heat of summer, and the abundance of clouds, mists, fogs and rains, which distinguish the climate of Britain from that of the Continent to such a degree that geographers regard it as a separate climatic province, blessed with an atmosphere pre-

eminently oceanic in its character. The sea-air is felt over the whole archipelago, and, being heavily charged with ozone, it destroys many germs of disease, and rears from end to end of this favoured region a thoroughly healthy and vigorous race of men. It is true that the frequent fogs act depressingly on the spirits of men, but this must be accepted as the inevitable concomitant of the abundant moisture in the air, that invaluable source of the ever-full rivers, of the fertility of the soil, and of the brilliant verdure of the landscape at nearly every season of the year.

As the British Isles lie in the track of the storms which come (most frequently in winter) from North America, and often sweep with unbroken cyclonic force over this archipelago, it is not to be wondered at that it is, more than any other part of Europe, exposed to the fierce anger of the elements. Sternly, but very effectively, these storms have reared a race of skilful, hardy mariners, and pour out with increased profusion both the precious boon of ozone and the abundance of aqueous precipitation. But even without these oceanic storms the autumn and winter would be seasons of heaviest downpours, in contrast with the interior of the Continent, which receives its heaviest rainfalls in summer. For the sea attains its highest temperature in the autumn, and retains it with but slight diminution right

into the winter. In Scotland the mean temperature of the sea is in January 5·4° F. higher than that of the atmosphere of the coast. Therefore from the early autumn warm winds, necessarily laden with moisture, blow for several months over these islands, and, coming in contact with the land, which is steadily growing colder, they precipitate rain and occasionally much snow: this latter, however, never enshrouds the fields with its white mantle for any length of time, and never injures the succulent verdure of the meadows. Therefore these islands hold, with respect to the quantity of aqueous precipitation, the foremost position in Europe. Ireland, thanks to her advanced westerly position, has always been thoroughly well watered, and poets designate her as the 'Emerald Isle'; her churches and castles are overgrown with luxuriant ivy; but, being of smaller extent and of slight elevation, she does not appreciably deprive her larger eastern neighbour of the fertilizing moisture. On the contrary, Great Britain, whose longitudinal axis crosses the track of the chief rain-bringing winds at right angles, is favoured with the most abundant rainfalls, especially in the mountainous regions of the west [1]. The south-east of England,

[1] In Cumberland, 'on the Sty-Head Pass, at an elevation of 1,077 feet, the rain-gauge showed in the year 1872 the enormous fall of 243·98 cubic inches,

being situated on the leeward side of the rain-condensing mountains, is overarched, especially in summer, by a sky both sunnier and bluer than that of the rest of the country, greatly to the benefit of the farming industry. At the warm season, and only then, the difference of latitude makes itself felt even in these islands of equable climate. In the south the expanse of the land area, like that of Germany, tends, together with the steeper incidence of the sun's rays, to raise the temperature of the atmosphere ; nevertheless, it is only in London and her environs that the mean July temperature rises, as on the neighbouring continent, to 64·4° F. In winter, on the other hand, the impartial distribution of the sea breezes, and the universal cloud-screen which checks radiation, obliterates the effects of the difference of latitude. Scotland is, in winter, nearly as warm as England and Ireland, and nowhere in the two islands does the mean winter temperature sink down to the freezing point (32° F.). The mean January temperature of the Scilly Isles is 46·4° F., like that of the Riviera at Genoa.

It was not till after the severance of the British Isles from the mainland that they became a separate province with respect to their flora and fauna, that their climate

which, as far as has yet been ascertained, marks this region as the wettest spot in Europe.' *Encyclopaedia Britannica.* [TR.]

became as pronouncedly oceanic as it is now, and that the double effect of insularity was felt, viz. the extinction of certain races as explained above, and the preservation of others due to the impassable protecting barrier of the sea, which excluded causes of destruction at work on the mainland.

Ireland, separated earlier, naturally takes the lead in the process of preservation. She possesses twenty phanerogamous plants which Great Britain has lost, and of the fifteen genera of fresh-water fishes peculiar to these isles the majority belong to Ireland. The Alpine hare of these islands is obviously a survival from animals of the glacial period, the descendants of which have gradually, in adapting themselves to the altered conditions of life, undergone some changes, so that zoologists now describe them as a separate species by the name of *Lepus Hibernicus*. The same argument applies to the ptarmigan (*Lagopus Scoticus*), the nearest relative of the Scandinavian coot or waterhen, which is found, not only in Ireland, but also in Wales, Scotland and the mountains of northern England. But whilst the genuine Alpine hare (*Lepus variabilis*) of the Alps and northern Europe, like the ptarmigan of the Continent, drops his brown summer dress in winter for the protective snow-white covering, the British ptarmigan, as well as its Irish congener, most remarkably retains the brown covering right

through the winter, because with the disappearance of the permanent winter snows the white colour of those animals would, instead of protecting them, betray them to their enemies. The protective influence of insularity makes itself felt most distinctly in the world of insects. These isles are inhabited by as many as sixty-nine species of butterflies and seventy-two of beetles which do not exist on the Continent. The wild beasts, on the other hand, have naturally been destroyed by men earlier in Great Britain and Ireland than elsewhere, because no reinforcements were able to cross the impassable boundary of the sea. The reindeer, which pastured on the lichens of the German forests as far west as the Rhine, and in prehistoric days lived even in France, and supplied the Germans with clothing down to the times of Julius Caesar, died out in the British Isles about 1200 A.D.; the brown bear, an inhabitant of the British mountains, had been exterminated even earlier; the boar disappeared in 1620; the last wolf was killed in Great Britain in 1680, and in Ireland in 1710.

The inhabitants of Britain have cleared her former boundless forests to an enormous extent. These islands, from having been genuine woodlands, are now more destitute of forests than any other country of Europe. The oaks of Ireland, now few and far between, were formerly so abounding that to this day

the names of 1,300 localities begin with doire, which (like derry) is derived from dair, the Keltic term for oak. Oaks and beeches filled England's mountains and plains far and wide. When, in 1465, Leo von Rozmital, a Bohemian nobleman, visited the south-east of England, mighty forests covered the plains now filled with meadows, arable land, parks, villages and townships. He noticed with surprise the absence of the coniferous trees of his native Bohemia and the prevalence of deciduous trees. Forests of pine and of birches, with their gleaming white trunks, are from of old ornamental possessions of Scotland; and if it should prove to be true that the name of Caledonia, the ancient designation of the Scottish highlands, is derived from, or a modification of, the Keltic oeleddôn (thicket), then the now treeless heaths of Scotland would present themselves to our imagination as anciently adorned with the dark green needle-shaped leaves of coniferous trees. The Orkneys and the Shetlands, on the other hand, have doubtlessly always been bare of trees in consequence of the rough sea breezes which sweep over them almost incessantly.

The loss of their forests has fortunately not deprived the British landscapes of their charming verdure. The Briton has, with his genuine Germanic love of trees, the sublimest product of the vegetable world,

reverently preserved many a patriarchal specimen of oaks, beeches, yews, maple, elms and ash trees, which characterize and adorn the parks, pre-eminently those of the south-east, and to this day vividly remind us of the imposing forests of bygone days. The holly (*Ilex aquifolium*), which, with its glistening, evergreen foliage and clusters of scarlet berries, can only survive the mild winters of southern and western Europe, and is therefore wholly absent in eastern Germany, thrives in England and adorns both it and the highlands of Scotland. Thanks to the mild winters of Britain, even plants properly characteristic of the southern countries of the Mediterranean, and not at all proper to Britain, thrive well in these northern isles. In the parks of Dublin we meet with laurel trees of imposing dimensions, and the myrtle adorns Scotch cottages all through the year, unharmed by the blasts of winter. Fruit trees, on the other hand, which, like the olive, require dry summers, or, like the orange and citron, are destroyed by the least frost, and require in addition a high summer temperature, are wholly wanting. Not even the vine thrives under the feeble warmth of summer and the cloudy sky of autumn. The sunnier south-east of England ripens the nourishing Spanish chestnut, and apples, pears, cherries, plums, and many sorts of berries grow in great abundance.

It is a country eminently fitted to maintain an active, hard-working race of men. Its rich meadows, affording pasture to numerous herds of cattle of superior breed, alternating with waving cornfields and fruitful orchards ; its mineral wealth brought to the surface from innumerable mines, and an all-surrounding ocean abounding in fish, preyed upon by myriads of sea-birds, are inexhaustible sources of wealth to these islanders. And this same ocean, which so enriches them, also protects their national independence, and summons and stimulates them to engage in bold, seafaring adventures all over the globe.

The history of no other country has undergone so radical a change as has that of the British Isles by the reversal of their geographical position. In pre-Christian times these isles were an insignificant borderland of the then stage of history. The only attraction they offered to the foreign trader was the tin of Cornwall, as well as that of Brittany of similar geological formation. The tin was required for the manufacture of bronze, the hardest metal known previous to the discovery of the art of working in iron. But the tin mines of Brittany were exhausted very early, while those of Cornwall were still highly productive. This led to the discovery of Britain by Phoenician mariners some 3,000 years ago. They navigated these northern seas, visited the coasts of

Britain in search of tin, and those of Germany in search of amber. The Carthaginians, their successors in these hardy commercial ventures, were dominant in the Straits of Gibraltar about 600 B.C., and fetched their tin from the Ushant Archipelago in front of the jagged western coast of Brittany, so as to avoid crossing the stormy waters of the Channel, but the tin they received was Cornish tin. Hence the name of Cassiterides was given to the isles of the Ushant Archipelago, and not, as had been erroneously asserted, to the British Isles. In an ancient description of the coast-lines, written about 475 B.C., we read that the Carthaginians took about a fortnight to cross the Bay of Biscay, and then were wont to cast anchor in the Cassiterides to receive on board the tin which the native Kelts had brought from Cornwall in wicker-boats covered with skins.

Kelts dwelt on both sides of the Channel; Cimerian Kelts, intimately allied with each other by speech, customs and religion, occupied the country from France to the furthest north of England, whilst two tribes of Goidelic Kelts, of more distant kin to the Cimerian Kelts, and only differing dialectically from each other, had their homes in Scotland and in Ireland. The physical tripartite division of the islands, described above, had thus its counterpart in the ethnical divisions of the inhabitants. The

Cymeric name of the smaller western island was Vergyn (the western), which in the mouth of the Romans became Ivernia, the original form of the modern designation of Erin ; the larger island was known by the Goidelic name of Albainn (the mountain island), from the appearance that its western coast presented to the Irish. This designation the Greeks turned into the familiar name of Albion.

These islands, situated as they were at the edge of the then known world, had for some centuries commercial intercourse with that colony of Greeks only which, descendants of the Phoceas, inhabited parts of southern Gaul ; they were the founders of the city and port of Massilia (Marseilles). This commercial intercourse led to a most remarkable voyage of discovery, that of Pytheas, a native of Marseilles, a contemporary of Alexander the Great, about 300 B.C. Strange as it may sound, this voyage was held in slight estimation even in antiquity. The shrewd Massilian Greeks obtained their supply of British tin by the shorter overland route, and had founded, about 350 B.C., a commercial factory at the mouth of the Loire, with the view of possessing themselves of this overland trade. Pytheas, who sailed to Cornwall, the primary source of British tin, by the long, circuitous sea route, had presumably commercial objects in view, but he obviously also strove to advance the

science of geography. For Pytheas circumnavigated both Albion (which he only knew as Britain, the name given to the country by the Belgian Kelts who had immigrated from the Continent) and Ivernia, and he even visited the Shetlands. He studied the countries, their inhabitants, and with the use of the gnomon determined the latitudes of numerous stations on the coast.

As this meritorious Massilian was suspected of mendacity, the knowledge of these islands, which he had so thoroughly well explored, sunk into oblivion, especially as the tin, their only wealth as it was supposed, could be obtained more easily from Spain. When Julius Caesar contemplated his famous first invasion of Britain, he was unable, even in northern Gaul, to obtain any adequate information about the interior of the countries on the other side of the Channel, because hardly any Gauls from the Continent visited these islands, and those that did cross over were youths that devoted themselves to theological studies in the colleges of British Druids. In other respects the Kelts of these islands were held to be much ruder than those of the Continent. Of the extent of the country the reports were so exaggerated that Caesar actually believed in all seriousness that Britain was the extremity of a new, separate continent, a 'second terrestrial sphere'. In his two invasions, which were limited to the south-

east of England, Caesar discovered the insular nature of Britain, and upon reliable information he obtained he was able to expose the fallacy of its enormous extent. And yet during the first century of the Christian era it was a favourite exercise in the schools of dialectics and rhetoric to discuss the problem of the insular or continental nature of Britain. When at last Agricola, Tacitus' father-in-law, in 80–84 A.D., circumnavigated and made a survey of the country, its insularity was established beyond dispute, and the reliable data thus obtained led more than fifty years afterwards to the production of the map of Ptolemy, the great astronomer and geographer of Alexandria, in his sketch of the geography of the world of antiquity.

After the death of Julius Caesar Rome delayed the effectual subjugation of Britain till 43 A.D., as it was considered that there was nothing to be gained from the conquest of so poor a country situated at the extremity of the world. It was during the reign of the Emperor Claudius that the boundaries of the Roman Empire were advanced beyond the ocean. The subjugation was effected without much difficulty, as the country was split up into small, loosely connected principalities ruled by petty princes. The arms too of the British Kelts were very primitive ; the warriors wore neither breastplate nor helmet, a small shield constitu-

ting all their defensive armour. Their weapon of attack was a badly tempered broadsword and a short javelin; their chieftains fought like the Pharaohs of ancient Egypt, or like the heroes before Troy, on chariots, which they drove themselves.[1] And as the barbarous Britons had no navy, Rome easily subjugated the whole of England as far as the mountains in the west, with an army of no more than 40,000 men. They held this new province, their only transoceanic possession, for three and a half centuries with a garrison of only 30,000 men. A British chieftain brought as prisoner to Rome asked with amazement, how the owners of such marble palaces could covet the wretched huts of his own country? And as a matter of fact the Romans, with all their taxes and tolls (Londinium, on the Tamesis, was even then an important emporium of trade), could never recoup themselves for their costs of the occupation of this subjugated province. What was it then that led them across?

It was the knowledge that this large island offered an asylum to the malcontents in Gaul. The ancient Druidic religion of the Cymerian Kelts constituted a powerful national bond, a danger to Rome that could

[1] This description of the British war chariots is based on Mommsen's *Römische Geschichte*, vol v., but it does not quite tally with Caesar's account; B.G., IV. 33. [TR.]

not be ignored with safety. What the doctrine was that the Druids taught under the rustling leaves of the sacred oaks (the Derwydd, or Druida, as the Romans called him, i.e. the Oak-priest), we are no longer able to discover. Whatever it was, this doctrine, always ultra-conservative, spread inland with an amazing force, inspired its adherents with a stern fanaticism, flung firebrands across the water, and roused the passions of the people against the hated rule of the Romans, who, according to their wont, undermined the religious faith of their subject races by first latinizing the names of their deities, then substituting Roman images for those of the natives, and finally even building temples to Caesar, for whom they exacted divine honours and worship.[1] Even after the Roman rule had begun to take root there arose a new dangerous insurrection of the Britons, because these foreign rulers attacked the last asylum of the Druids in the isle of Mona (Anglesey) and cut down the sacred oaks. This occurrence clearly proved that the Roman possession of Gaul itself was insecure so long as Britain, the real home of Druidism, was unconquered and free.

Agricola maintained that it was necessary to bring the Goidelic countries, Scotland

[1] In no part of the wide Roman Empire did this enforced deification of Caesar act more fatally and more tragically than in Judaea. [TR.]

and Ireland, also under Roman rule, so as to deprive the enemies of Rome of their last refuge. Aided by the Roman fleet, which with the contracted breadth of the country in the north easily furnished his troops with the provisions that the barbarous country itself could not have supplied, Agricola not only subdued the warlike race of the Brigantes near Eboracum (York), but also gained a signal victory in a sanguinary battle against the allied, notoriously fierce Caledonian tribes north of the estuary of the Tava (Tay) between Perth and Dundee. This is the most northerly of all the battlefields of Rome ; it extended to the foot of Mount Graupius, now, since the eighteenth century, known as the Grampians, following an erroneous reading of a British edition of Tacitus, ' the biography of Agricola '.

However, the Imperial government of Rome declined to follow up this victory. It left the Scotch of Ivernia as well as the Picts (i.e. the painted or tattooed men) of the highlands unmolested, and limited itself to the protection of the British countries subject to Rome by raising the two famous Roman walls along the fifty-fifth and fifty-sixth parallels of latitude. This locality was selected because the narrowness of the land between the gulfs of Bodotria (Firth of Forth) and of Clota (Firth of Clyde) offered an effective barrier to an invader not possessed of a fleet. These Roman walls were not, as

was usually believed, common border walls, but spacious fortifications for permanent garrisons, provided with broad, solidly constructed Roman roads for the rapid transport of the troops from east and west. The northern bulwark between Edinburgh and Glasgow consisted of a broad road bounded in the north by a mound and by a ditch in the south. Of this structure there are but few remains left, but the southern bulwark, the well-known 'Roman Wall,' erected twenty years earlier (122 A.D.) by the Emperor Hadrian, was twice as long, and its remains are the best preserved monuments of all the Roman works of defence. They prove more clearly than the northern structure does that the bulwark was made to face both ways, mainly towards the north, but also towards the south, for the Brigantes, though subjugated, were not yet believed to be well affected to Rome. The northern enemies had to face a mighty stone wall, some 20 feet high and 6 to 9 feet thick, fronted by a broad and deep moat; the southern foes were confronted by two parallel earth-mounds enclosing a deep moat. On the road between the stone wall and the mounds lay, carefully distributed, the camps of the cohorts, guard-houses and armed redoubts. It was an imposing piece of work, which extended in a gentle curve from the lowlands of Eden as far as Newcastle-on-Tyne, and, with its 80 gateways and 320 turrets (re-

doubts), required a garrison of 10,000 to 12,000 men, or rather more than one-third of the whole army of occupation stationed in Britain.

Only once more, as in Agricola's time, did a Roman army advance beyond the Scottish lowlands: led by the valorous Emperor Severus in person, it chastised the Caledonians for their inroads into Roman territory by invading their own country, and even compelling them to cede to Rome considerable tracts of their land. But when, in the year 211 A.D., the aged Emperor died in the camp before Eboracum, then the decline of the Roman power began to be felt even in Britain. During the reign of Diocletian the Romans evacuated the region enclosed by the two fortifications, but the garrison of Hadrian's wall was still retained. The inroads of the Highlanders grew more and more dangerous, especially since the arrivals and settlements of Irish Kelts in Caledonia had become so numerous, that the name of Scotland was transferred from Ireland to the Scotland of our days. Finally the whole army of Rome was concentrated between Hadrian's wall and the camp at Eboracum, but during the reign of the Emperor Valentinian Irish tribes ventured to invade Wales, and to carry fire and sword right up to London.

When in addition to these Keltic inroads Britain was also invaded by German tribes

from beyond the German Ocean, then Rome withdrew her legions from the island. This led, shortly before 400 A.D., to the settlement of Germans on the south and east coast of the main island of the British Archipelago. These settlements exist to this day. In the Germanization of Britain that now set in, South Germans, viz. Frisians, Angles and Saxons largely preponderated.[1] Frisians occupied as early as 374 a strip of the northern coast of Scotland along the Firth of Tay, which, in consequence, was known for some time as the Frisian Gulf. In no other parts of the island did Frisians settle down in compact masses, but they participated sporadically in the various conquests of the country, but by no means in such a subordinate manner as is commonly assumed. Witness the numerous Frisian roots in English words. Even at this day a native of Sylt[2] could, if need be, make himself understood by an Englishman by using his native dialect; a feat which a German of Lower Saxony, say of Hanover,

[1] The Germans of the German Empire, of Austria, Switzerland, Luxemburg, Flanders, Holland and England, are all, properly speaking, South Germans; the extinct Gothic tribes were East Germans, and the Scandinavians (Swedes, Norwegians and Danes) were North Germans.

[2] 'The largest German island in the North Sea. At the present day the most English, or Angli-form, dialects of the Continent are those of the North Frisian islands of Amrum and Sylt on the west coast of Schleswig—*Encycl. Britannica.* [TR.]

would attempt in vain. The stock of the new nation, now in the process of formation, consisted principally of Anglians and Saxons, which ultimately fused into a single people. They had during the fifth century repeatedly invaded and possessed themselves of the British coasts along the German Ocean and the Channel. As is usually the case with popular traditions, these multitudinous landings were all ascribed to the historical invasion of Hengist and Horsa, which suddenly changed Britain, the hitherto north-western termination of the Gallo-Roman Empire, into the western limit of the second immigration stream issuing from Germany.

About the proportions of the constituent elements of the British nation we are still very much in the dark ; it is, however, historically established that both the English and the German nations are of Teutonic origin. Though it sounds archaic, it is yet by no means inaccurate to call Britons Anglo-Saxons, for Angles and Saxons with Frisian admixture were the principal founders of the modern English nation ; subsequently, in the early middle ages, there arrived also large contingents of Danes and Norwegians, so that from 1016 till 1035 A.D. England and Norway were the left and right wings of the Danish Empire of the Great Canute, in which the German Ocean played a rôle analogous to that of the Mediterranean in the Roman Empire. It is, however, admitted that,

disregarding the Shetlands, the admixture of Norman blood, traceable up to the coast of Ireland, was of slight importance with regard to the whole of the British nation. Only to the Scottish variety it is impossible to deny a larger admixture of the blood of the ancient Northmen, as may be inferred, with high probability, from the high stature of Scotchmen. The men of Scotland and of Norway are the only Europeans who attain an average height of 171 to 172 cm. (= 5 ft 7⅓ in. to 5 ft 8 in.) We are unable to share the view of the French geographer Elisée Reclus, who proposes to call the British nation Anglo-Kelts rather than Anglo-Saxons. So small is the Keltic element in the composition of the British nation that the history of the island can fitly be divided into two distinct periods: the ancient period when the Kelts were practically the sole inhabitants, and the modern period, dating from 400 A.D., where they gave way before the tides of Germanic invasions. According to Mommsen all the Keltic subjects of Rome have, during the centuries of Roman rule, gradually dropped their native speech and adopted Latin, the language of their conquerors; in Britain then Latin was spoken as far as the mountains of Wales and of northern Scotland. If the Anglo-Saxons had not completely suppressed and supplanted the Keltic tribes, the speech of the country would undoubtedly have

shown a large admixture of Latin words, but instead of that the inhabitants spoke a pure German dialect till, in the eleventh century, a closer intercourse with France led to the importation of French words and phrases, long indeed before the momentous battle of Senlac (1066 A.D.). In the present day Keltic speech and manners prevail in Wales, in the north-west of Scotland and the neighbouring isles, and in Ireland, just as Polish continues to be spoken in the east of northern Germany. Everywhere else within the British Isles the Kelts have been absorbed by the Germans, much in the same way as the Slavs have been Germanized by the Teutons, who in the latter part of the middle ages streamed back eastwards to repossess themselves of the lands beyond the rivers Saale and Elbe, and peopled all the territories between Bohemia and the Baltic. It follows then indisputably that the inhabitants of Britain are Germans by descent as much as the Germans of the German Empire itself. Nevertheless the peculiar character and features of their new country formed of these German immigrants a perfectly new nation with a stamp of its own, exactly as centuries afterwards the immigrations from England into America gave birth to a new nation, the American, on the other side of the Atlantic. The battle of Senlac (or Hastings) did not infuse much foreign blood into the veins of the British or English

nation. William the Conqueror and his knights were of Danish descent, who had, about 150 years previously, made themselves masters of Normandy. There they took French women to wives and learnt to speak French. The pressure of the Norman conquest created in Britain, since 1066 A.D., a peculiar system of casts under the dominance of the conquerors, whose speech was not understood by the subject nation. The victorious Norman king distributed his Crown-fiefs exclusively among his French-speaking Norman nobles, and the Church also appointed none but prelates of the same race for all the higher ecclesiastical posts. For centuries French was the language of the Court, the nobles, and the highest dignitaries of the Church, whilst burghers and peasants retained their popular German speech. The Latin of the church and of the higher government offices, which were mostly filled by the clergy, formed the intermediary between the two numerically very unequal sections of the nation, and the language then spoken could neither be called Roman nor yet wholly German. Even under the Plantagenets, when Anglo-Saxon had begun to recover some of the ground it had lost, and when the loss of Normandy had restored to the island its independent existence, and the nation had forced the King to sign the Magna Charta, the earliest source of the English constitution, even then all

public decrees, both judicial and administrative, were promulgated in Latin. It is probable that none of the first three Edwards spoke other than French; indeed it is reported of Edward III that he found it very difficult when, on a certain public occasion, he had to utter in Parliament three words in the language of his people. French predominated entirely, and French threatened to become the sole official language of the state; in Parliament it wholly prevailed. Not till the year 1300 did political songs, intended to be sung by the whole people, and national ballads, which celebrated the heroic deeds of nobles and people alike, strike the true note of the amalgamated speech. The English language appeared as a rejuvenated Anglo-Saxon speech with a copious admixture of French terms for the ideas of chivalry, of the requirements of higher political life and the abstractions of science.

With the rigidly closed circle of internal intercourse, which was all but free from transoceanic interference, this wonderful language became with astonishing speed the property of all the ranks of the nation, so that animosities long held to be irreconcilable most fortunately disappeared. The common language, aided by inland communications, and unchecked by obstructive mountain-ranges, formed out of the ethnic chaos previously existing a unified nation related to the Scottish variety, which,

notwithstanding that it had a larger admixture of northern blood and was influenced in manners and customs by Goidelic peculiarities, differed after all but slightly from that of the sister nation in the south. The ambition to subject France by force of arms was given up, and the wise resolve was formed to devote the nation's energies to the cultivation of the real home-interests of the people. But through the whole of the middle ages this healthily expanding island race lay under the ban of an oppressive nightmare, caused by the geographic position of the islands at the extremity of the then known world.

Suddenly the curtain was raised. The age of Columbus, of Vasco da Gama, of Magelhan, revealed to men in outlines the features of the whole globe, which had previously been practically unknown. Now it became clear and ever clearer that the British Isles were not condemned by a fatal geographical position to the hopeless existence of an *Ultima Thule* but were, on the contrary, appointed by an all but central position on the land hemisphere to play a leading rôle amongst the leading nations of the world.[1]

[1] It would be difficult to find in all history a more convincing proof of the influence of the geographical position of a country on the fates of its inhabitants than is that of Britain. Englishmen of the pre-discovery days formed, in spite of the genius and valour displayed by their race on the fields of war,

This 'central position' of the British Archipelago, though not central with mathematical accuracy, yet lies for all practical purposes sufficiently near to the real centre of that hemisphere which contains the largest extent of land, just as New Zealand occupies a similar position in the hemisphere of the greatest amount of water.[1] From the British Isles then all the seawashed shores of the globe can be reached by ship, the most convenient and cheapest means of transport. It is true that the British Isles are washed only by Atlantic waters, and that to reach either the Indian or Pacific Oceans Africa or America must be doubled at high southern latitudes, but just as the Suez Canal saves sailors the voyage round Africa, so will the isthmian canal of Panama do away with the necessity of

of poetry and science, but a small population of comparatively little influence on the march of universal history. The discoveries of the great navigators of Latin blood enlarged our knowledge of the globe, revealed the central position of Britain on the land hemisphere, and led unexpectedly to the expansion of this little kingdom into the world-wide British Empire. It was for England that these discoverers worked, and not for Spain or Portugal, as they fondly had hoped or intended. [TR.]

[1] If a spectator could be raised above London to a sufficient height to see half the globe beneath him, his horizon would extend to beyond the Cape of Good Hope, and would embrace all Europe, Asia as far as the western Pacific, Canada, north, central, and the greater part of South America; only Australia, New Zealand and a small part of South America, would be below his horizon. [TR.]

doubling the distant and inhospitable regions of Cape Horn. The distant coasts, which blocked England's access to the lands of the southern hemisphere, played in the early centuries of the age of discoveries a merely subordinate part in British trade; but for the ocean traffic between Europe and America, which was at that time of the highest commercial and economic importance, the position of Britain was far and away the most advantageous, and Britons exploited it with ever increasing energy and success.

The British Kelts were not distinguished as seafaring men, and even those hardy sailors, the British Teutons, who had crossed over from the Continent had, as we have already pointed out before, gradually unlearnt their skill as mariners and settled down as farmers and genuine land-lubbers. The first navy that England ever owned, that of Alfred the Great, was wholly built on Frisian wharfs, on the Teutonic shores of the German Ocean. Down to the expiration of the middle ages English navigation barely passed the limits of its coastal waters, and it is well known that in foreign commerce the English merchants of those days were far behind the traders of Germany. The German Hanseatic factory in London, known as the Steelyard and surrounded by a fortified wall, was situated above London Bridge, and constituted for ages the central emporium of the German Hansa. The

ships of this confederation of the north German wholesale traders sailed under their own flag; they imported into England raw products from Russia and Scandinavia, fish from the Baltic, especially herrings, which had not yet sought the waters of the west; also salt, southern fruit from Spain and Portugal, costly spices of the East, and German and Flemish woollen and linen goods. From the English the Germans purchased only cattle, farm produce, hides, corn, beer and cheese. With respect to the profitable exchange of cheap wool for costly clothes the 'Easterlings' exclaimed exultingly: 'We purchase from the Englishman the skin of the fox for a groat, and sell him its brush for a florin.[1] In riches the Germans of London were surpassed only by the Italian bankers of Lombard Street, and both these communities frequently helped the kings of England out of grievous financial difficulties.

But towards the expiration of the middle ages the native commerical spirit of Englishmen began to bestir itself in all British ports, pre-eminently in London. Trade guilds were formed, following the examples set them by Germans and Italians. The

[1] Nevertheless, so high was the confidence placed by the English in the plighted word of these shrewd, but honest, merchants from the East, that the English term 'sterling', derived from easterling, stands for genuine and reliable. [TR.]

very name of 'Merchant Adventurers', adopted by one of these associations, gives evidence of the hardy spirit of enterprise of these men, who soon were able to compete with the Hansa even in the Baltic right up to Livonia, a region which had for a long time been regarded as the exclusive domain of the Hansa. The German insistence on the full enjoyment of the special privileges conceded to them by the kings of England, and persistent refusal to make similar, countervailing concessions to Englishmen, led to much bickerings and even to very troublesome filibustering expeditions on the high seas. On one occasion the English captured in the Channel a fleet of 108 sail from Lübeck and Riga on their homeward voyage from Spain, heavily laden with salt and southern fruit. The navigators of Lübeck or Danzig revenged and recouped themselves by their audacious cruisers, who for a long time infested the German Ocean, and picked up many a valuable English prize.

The final and decisive victory of the English ocean-trade over that of the Hansa and the steady expansion of the British merchant navy dates from the glorious reign of Queen Elizabeth. After shaking off the Spanish incubus, it was the task of Britain to overcome the first maritime power of the day, that of Holland, which had in a short time risen to a dangerous pre-eminence at

the very gates of Britain. When that was achieved by Cromwell, then began the era of British expansion [1], now no longer threatened by any rival, and England's pre-eminence made itself felt in all the seas. At last the country began to exploit to the fullest extent its leading position at sea, its numerous, excellent harbours, the newly acquired nautical skill and hardihood of its people, which grew with the growth of the national aims and purposes. By their thousands of fortunate voyages the merchant navy had reared a body of bold, tried sailors and captains, who, by their fearless and persevering enterprise, inspired the whole people with the love of maritime adventure. The fleet carried the British traders, colonists and planters, into the remotest regions of the world, and, returning home, poured vast wealth into the coffers of their employers in the mother-country. The treasures thus accumulated were converted into new sources of profit, either as capital or as investments in the means for still further stimulating the industrial pursuits of the people. But this irrepressible fleet also carried on board, under the shelter of the Union Jack, renowned explorers and discoverers, such as Captain Cook, Sir John Franklin, Sir Robert M'Clure, Sir John and Sir James Ross, Admiral Fitzroy, with

[1] There intervened a short period of British humiliation during the inglorious reign of Charles II. [TR.]

Charles Darwin, Nares and Scott, who set out to reveal ever more fully the features of the globe, its coast formations, the depths of the seas and so on; in a word, to search out the nature of lands and seas with the object of primarily extending the spheres of Britain's naval power, but collaterally also of advancing the ideal interests of men.

In the eighteenth century Britain had, by exploiting the nautical skill of her sailors, established her commercial pre-eminence and colonial power over the whole surface of the globe, and in addition English manufacturers acquired, in the nineteenth century, the leading position in the industrial world. Utilizing the British invention of steam-power, the country was able to work its coal and contiguous iron mines to such great advantage that even continental regions of much greater extent, such as the United States of America, and China, with her as yet wholly undeveloped fossil wealth, fail to compete with England to any marked degree. This supplied the natural basis of the rapid and continuous growth of British manufacturing industry. Now life began to pulsate in the districts of the palaeozoic formations of western England and southern Scotland; by day and by night miners searched in the bowels of the earth, and in Wales indeed submarine coal-beds are worked to a great distance from the shore. The small sleepy towns of the west of Eng-

land were suddenly roused to great activity, and grew into mighty centres of various industries. Forests of tall chimneys pouring forth steam and smoke into the hitherto pure air gave a new face to the landscape, now swarming with multitudes of busy men; steam vessels trebled the carrying capacity of the mercantile navy, and the holds and decks of her ships were crowded as never before with the products of steam-driven machinery. The transoceanic colonies became far more useful and attractive to intending emigrants, because the now rapid passages had enormously reduced the intervening distances. English manufactures were exported to much greater advantage to Canada, India, or Australia, and similarly raw materials were more profitably imported from these countries. The English love of commercial enterprise attained full fruition under the powerful impetus of the incessantly pulsating traffic between the mother-country and her colonies, and even foreign countries were, as far as possible, sucked into the whirlpool of the English trade in manufactures, thus increasing the financial power of English capitalists to such an extent that the *haute finance* became a separate power in the land equal in importance to that of the manufacturers and merchants.

From this rapid sketch of the history of

Britain we see that the insular position of the country has at all times had a preponderant influence on the fate and character of her inhabitants. Now, as at the very dawn of their history, the sea supplies these favoured islanders with a large part of their food; it is calculated that British fishermen draw from the sea about £33,000 worth of edible sea produce for each working day in the week. Every breath of wind, come from whatever quarter it may, brings fresh ozone-laden air to the lungs of men and animals. The love of open-air sport, to which the people have always been addicted; the abundance of animal food, obtained from the excellent breeds of cattle raised on the succulent grass of the well-watered pastures, confer on the people enormous boons to an extent hardly paralleled anywhere else. The wonderful articulation of its coast-lines, which brings every inland spot nearer to the sea than is the case even in Hellas; the penetration of sea air along the river estuaries ending in gulfs, unmatched in the whole world, have wedded [1] this nation to the sea far more intimately than any other

[1] The doges of Venice were wont with great ceremony to wed the sea by dropping a gold ring into it, but this Venetian intimacy with the sea was of small extent and short duration, whilst that of England is world-wide and destined, it is hoped, to endure permanently, and the kings of this realm might with more propriety perform a similar wedding ceremony as part of their coronation festival. [TR.]

people can boast of. To this day Great Britain owns two-thirds of the maritime carrying trade of the whole world, and British navigation gives employment to more than 250,000 seafaring men. Nowhere on earth do the lines of sea traffic and of submarine cables converge so numerously as on this favoured spot, which, from having been a neglected portion of the land situated at the extremity of man's sphere of activity, has risen to a pre-eminent, commanding position since its central position in the land hemisphere was revealed to men.[1]

The ocean, the stepping stone to Britain's greatness, was a wall of protection against hostile, and a means of easy access to friendly, visitors. Under the shelter of the country's insular seclusion and inland peace the historic Teutonic freedom of the peasantry assumed the enviable shape of her firmly established political system, which guarantees to the individual his fullest personal liberty compatible with strict adherence to law and order. In the history of Britain we meet with no sudden transitions from mediaeval bondage to the fluctuations of modern days, such as we witness on the European Continent, because England's national life advanced organically from precedent to precedent. When in

[1] 'The stone rejected by the builder has become the corner-stone of the building'. [TR.]

England a king with autocratic instincts attempted to encroach on the liberties of the subject, the defenders of the nation's freedom fought for the maintenance of the old, tried laws and traditions, and the country was spared the convulsions which, consequent on the French Revolution, shook like an earthquake most of the countries of Europe. Neither was Britain destined to suffer from the horrors and devastations of the Thirty Years' War any more than from the subversive actions of Napoleon, which afflicted all the powers of Continental Europe.

Day by day, hour by hour, the British Archipelago profits by its commanding insularity ; in peace and in war it can be reached only by ship ; all approaches are made only by individuals, never by inrushing masses, as happens all along the more or less artificial boundaries of continental states. Thus time is given to subject the importations of the foreigner to searching examinations and tests, and old established practice is not hastily abandoned and exchanged for glittering and often meretricious innovations. It was thus that hospitable England has been enriched by many profitable inventions and fruitful ideas of her gifted, richly endowed neighbours. Though Britons are deeply indebted to the foreigners within and without their borders, they have none the less remained a nation of sound conservative instincts coupled with progressive tendencies ;

realistically and energetically they exploit to the full the advantages of the richly endowed country that a kindly fate has bestowed on them.

VI

AMERICA AND THE AMERICANS

VI

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Section I

The American Nation

In what sense can any community in either of the two great continents of the western hemisphere be called a nation? Does community of race, of history, of religion or creed, constitute the chief element of the national bond of any American political unit? Obviously not.

If we restrict our investigation to the United States, the most eminent, mightiest and most prosperous of all American political organizations, and compare it with any nation of Europe, are we not met at the very threshold of our inquiry by differences and contrasts so perplexing as to cause us to hesitate before engaging in a task so arduous and so beset with difficulties?

Englishmen, Frenchmen, Germans, preeminently Italians, have each of them a glorious, common heritage in the past,

whilst Americans have very little past history to look back upon, very short, and comparatively tame records of common sorrows and joys ; what then is it that holds them together with more than adamantine bonds ? Let a keen German-American observer [1] supply the answer : 'Neither race, nor tradition, nor yet the actual past binds him (the American) to his countryman, but rather the future, which together they are building'. In other words, the history of America is tinted with the rosy colours of hope, whilst that of the nations of the Old World is tinged with the sober, sad tones of memory, with the consciousness of an endless, unbroken and unbreakable chain of causality.

It is easy to trace the growth and developments of the nations of Europe back to the geographical necessities of their several countries, but it is no slight undertaking to foretell the future from the geographical features of the American Continent.

If counted by achievement instead of by years, America has a long and most impressive history behind her. Europeans had to build up their civilizations by slow and painful processes, often thwarted and even put back by wars due to the envy, malice and ambitions of their neighbours, whilst the American emigrants from Europe brought into their new homes the ready-made civil-

[1] Professor Münsterberg.

ization of the Old World, and had only to solve the comparatively easy problem of transplanting it into a new, fresh and virgin soil, being free—not at the outstart, it is true, but ultimately—from the harmful interference of hostile neighbours.

Again, the nations of the Old World have been spending more than a thousand years in the endeavour to draw the boundaries between the ecclesiastical and civil powers of the state, and have not yet fully solved that problem ; the Americans, on the other hand, being unfettered by foregone conclusions, by past traditions, prejudices and vested interests, have no religious questions to deal with. Thus American progress is so rapid and unchecked that an American decade is equal to a European century, an American century to a European kiliad.

When the European immigrants, especially those of the Anglo-Saxon race, first settled on the New Continent, they rapidly discovered the vastness of the great inheritance that a kind fate had bestowed upon them. The spade brought to the surface gold, silver, and, what is far more precious, coal, iron and petroleum ; to the great abundance of aqueous precipitation the country is indebted for numerous watercourses, which far exceed in number and volume of water the greatest rivers of Europe, and their water-power from the early days of American history stimulated industries

of every kind, and the fertile soil rewarded the husbandman's labour with crops of unprecedented abundance, with crops of cereals introduced from Europe, viz. wheat, rye, barley, oats, rice, as well as of products of the soil indigenous to America, such as maize, potatoes, tobacco, cotton and many others which need not be specified; the gorgeous forests of America, exploited as they have been for upwards of two hundred years, still yield timber in profusion, and show no sign of diminution. Add to all this the absence of the fatal incubus of militarism, due to the absence of hostile neighbours above referred to; the love of freedom in the breast of every American citizen; the internal free trade enjoyed by the inhabitants of that huge territory and population, and who can wonder at the amazing increase in wealth, power and influence of the mighty 'Bundesstaat' of the Western Continent?

Section II

The Physical Geography of the United States

The territory of this greatest of all republics consists of a vast oblong quadrilateral, bounded on the east and south-east by the Atlantic, and on the west by the Pacific, thus forming a mighty, living bridge con-

necting the two great oceans of the globe ; in the north the republic borders on the Dominion of Canada, and in the south on Mexico and the Gulf of Mexico. It covers an area of nearly 3,000,000 square miles, which is about three-quarters of the area of all Europe; but whilst part of northern Europe is scarcely habitable, being north of the Arctic Circle, and even that part which is south of Arctic regions consists partly of frozen swamps, called tundras, and is unfit for the abode of civilized man, every district of the United States offers an inviting home for European civilization. Like Europe the territories of the republic lie wholly outside the tropics, but her southern states : Louisiana, Alabama, Georgia and Florida are very near the Tropic of Cancer, and enjoy the climate and productions proper to well-watered subtropical regions.

The distribution of mountains, highlands and plains is simplicity itself if compared with the great complexity of Europe. The European traveller landing on the eastern shore of the States, and traversing the continent from east to west, at once meets with well-cultivated plains and slopes washed by the Atlantic, crossed by numerous watercourses, which descend from the beautiful but not very lofty Alleghanies and Appalachian Mountains, that are covered to their summits by a rich and varied vegetation. Here are the homes of the first settlements

of the Anglo-Saxons, and accordingly the traveller finds himself in the midst of a vast and busy population inhabiting numerous cities, towns, villages and farmsteads, some of whose names are familiar household words in every civilized part of the globe. Having crossed those eastern ranges and descended their western declivity, our traveller enters on a vast plain, watered by the huge Mississipi and its tributaries, some of which rival in length and in volume of water the largest main rivers of Europe. This plain consisted within the memory of men still living of boundless grass-lands, roamed over by huge herds of bisons or buffaloes, engaged in incessant warfare with man, with fourfooted and reptile foes, and with the still more terrible prairie fires. Now these whilom wild plains are studded with numerous villages, large and small settlements of men, are crossed by railways of unsurpassed length, connecting the Atlantic with the Pacific, and its rivers swarm with cargo and passenger ships, numerous beyond the dream and hopes of the most ardent well-wisher of the States. Is there any other community on the face of the earth that can boast of such an achievement within the lifetime of a single generation? Our traveller, still pursuing his westward journey, is brought to the foot of the lofty mountains of the west, of more than Alpine grandeur. Many of the peaks

pierce the snow-line and have their summits crowned with perpetual snow. Still pursuing his westward route and traversing these ranges and the plateaux interspersed among them, our traveller now descends into the narrow, but brilliant coast lands washed by the Pacific. He has now passed over a distance of nearly 57° of longitude, representing about 3,400 miles and a difference of time of nearly four hours.

It is moreover to be noticed that the American mountains, unlike those of Eurasia, have a meridional, not an equatorial direction ; hence there are no sudden transitions of temperature and climate ; the genial sea breezes from the Gulf of Mexico sweep freely over the plains of the Mississipi, and render their climate far more oceanic, more equable in character than it would have been with a configuration of the country similar to that of Europe. It is hard to say which is more surprising, the simplicity or the grandeur of the geographical features of the territories of the great American Republic.

Section III

The History of the United States.

We can and for our purpose need do no more than recall a few of the most salient events in the history of the United States.

In the latter half of the sixteenth and in

the first half of the seventeenth century, there were formed sporadic settlements of Anglo-Saxon colonies on many parts of the Atlantic coasts of North America. These brave and hardy adventurers had to endure great hardships from the rigours of the climate, from the scanty resources afforded by a savage country, and from the hostility of the red natives, and of Spanish, French, and Dutch settlers in the neighbouring territories. Yet they gradually gained strength, and, in 1619 A.D., Virginia led the way in the career of self-government by the meeting of their first 'House of Burgesses', as the local parliament was called. But this very year, so fraught with future blessings to the whole country, was also the time of the landing of the first cargo of negro slaves, an appalling instance of the sowing of tares by the powers of darkness amidst the God-sown wheat.

The most notable of all the European settlements, and most fraught with benefits, was that of the much revered 'Pilgrim Fathers', because it was conceived and carried out under the impulse of lofty religious motives. The 'Pilgrim Fathers' landed from the small craft, the *Mayflower*, in 1620. Before landing they signed a compact declaring that they had sought this new home 'for ye glory of God and the advancement of the Christian faith, in honour of our King and Countrie', and

that now in the sight of God they would 'combine . . . together into a civil body politik for our better ordering and preservation and furtherance of ye end aforesaid, and by vertue hearof to enacte, constitute and frame such just and equal lawes, ordinances, actes, constitutions and offices from time to time as shall be thought most meete and convenient for ye generall good of ye colonie'. This small company of about one hundred souls were, in Milton's words, 'faithful and freeborn Englishmen and good Christians, constrained to forsake their dearest home, their friends and kindred, whom nothing but the wide ocean and the savage deserts of America could hide and shelter from the fury of the bishops'. Such was the small, humble seed from which sprung the New England, the foster-mother of the best, noblest and most fruitful aspirations of the mighty Anglo-Saxon Republic beyond the sea. To this day the best men of the land derive their noblest impulses, their most ardent patriotic emotions from the traditions of these early founders of their country. Nurtured and reared amidst conflicts with rude nature and ruthless men, principally Frenchmen in unholy alliance with the indigenous Indians, the English ultimate'y prevailed, and with the battle of Quebec (September 13, 1759) Canada was wrenched from the French and taken possession of by England. Thus the Eng-

lish settlers were fully liberated from their most dangerous and troublesome rivals. It was mainly Englishmen of the Old Country that gained wonderful victories over the French both by sea and by land, but it was the colonial English who reaped their fruits. Freed from the fear of France, the republican instincts of the American-English now made themselves felt with unrestrained force, and when the mother-country was infatuated enough to endeavour to impose on the colonists taxes without representation, they promptly resisted and effectually asserted their independence. Frenchmen, Spaniards, Dutchmen were absorbed, and only Canada, French Canada, was left to the mother-country. An apparent anomaly, which is however readily explained, if we call to mind the bitter feelings of the French-Americans against their aggressive Anglo-Saxon neighbours. They had little love for England, but the 'Yankees' they hated.

When once the country was constituted the population increased at a portentous rate; partly from the natural excess of births over deaths, but mainly from immigration of Germans[1] and Irishmen with a moderate intermixture of Dutchmen, Swedes and Norwegians, as well as some Spaniards and Frenchmen. But it is only men of

[1] There are large districts in the States where German is more commonly spoken than English.

Germanic blood that easily adapt themselves to the lofty ideals of Anglo-Saxon freedom, self-government and Puritan theories of life.

The political history of the country mainly turned on the conflict between state rights and national rights, and on the endeavour first to limit and to mitigate, and ultimately to abolish, the curse of negro slavery. Not from any inherent necessity, but by a curious combination of circumstances, the two problems were intimately related to each other, so that in the great Civil War during the presidency of Abraham Lincoln, 1861–65, both were settled simultaneously. The negroes were set free and the 'Staatenbund' of America became an indissoluble 'Bundesstaat'. The necessity of this latter conclusion is made evident by a rapid glance at the physical map of the country. Where could any 'natural' defensive boundaries have been traced? And how would the progress and prosperity of the people have been thwarted and set back by the petty jealousies of petty states with indeterminate frontiers? Let the reader conceive, if he can, a petty Holland at the mouth of the Mississipi pursuing aims at variance with those of their hinterland. Could that organization have withstood the pressure of the vast territories behind, who derive their life-blood from the most extensive water-system of the globe, all terminating in the Mississipi. When

the Civil War had broken out a pre-eminent English statesman ventured to predict that 'Jefferson Davis had made a nation of the southern States', and even long before that war one of the gentlest and most highly gifted Americans addressed the slave-holding Southerners in these burning words :—

> Ef I'd *my* way I had ruther
> We should go to work an' part,
> They take one way, we take t'other,
> Guess it wouldn't break *my* heart ;
> Men hed ough' to put asunder
> Them that God has noways j'ined ;
> An' I shouldn't gretly wonder
> Ef there's thousands o' my mind.

But it was all in vain ; the country was providentially saved from a great misfortune, such as had overtaken Germany in her calamitous Thirty Years' War, and condemned her to waste her energies for more than two centuries in religious and dynastic squabbles at home, and to shed her blood in foreign quarrels abroad. James Russell Lowell was mistaken : God *had* joined these states, and all the valour and skill of Generals Lee and Stonewall-Jackson were of no avail ; they could not sever those whom God had joined.

The original thirteen colonies that in the latter half of the eighteenth century numbered a population of 2,000,000 had swollen by the latter end of the nineteenth century into a mighty confederation of forty-five states supporting a population of 80,000,000

inhabitants. A stupendous result without parallel in the history of man ! Would such an achievement have been possible if the geographical features of the country had been as complex, as full of contrasts, as those of Europe ?

America has been called the living bridge between the two oceans of the globe, but how much more completely will she fulfil the mission of combining the Atlantic with the Pacific when the Panama Canal is dug and open to the navies of the world ! What marvellous and unforeseen developments may we not anticipate from this great international waterway being under the control of a great liberal power !

American rulers and statesmen have yet many difficult problems to solve ; such as (*a*) the question of dealing with a population compounded of so many heterogeneous elements ; will they continue in their mutual repulsion ? or will the many-typed Europeans, Negroes, Mongols and Red-men amalgamate into a new race as Britons, Anglo-Saxons, Danes, Normans and Flemings, etc., have done in England ? (*b*) the problem of guiding a busy democracy that is struggling with main and might, albeit haltingly and unconsciously, to create an aristocracy of talent, and to combat the formation of a vulgar aristocracy of money, with their 'Gospel of Wealth'; (*c*) the settlement of the question of adhering to,

or of abandoning the Monroe doctrine, for this means settling the international relations of the States; (*d*) the much needed advancement of this vast concourse of men in education, culture and refinement.

But let the future bring what it may, this much may safely be predicted without the possession of prophetic gifts: THE UNITY, THE COHERENCE, OF THE NATION IS ASSURED.

VII

GERMANY AND THE GERMANS

VII

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Between Denmark in the north, and Italy in the south, France in the west, and Russia and Hungary in the east lies a tract of land that might be called the 'Heart of Europe'. The whole of this quadrangular mass might even to-day be called 'Germany', for the chief part of its population is German, and its states are fragments of the German Empire[1] of mediaeval times. But as in 1871 the youngest of these states, the modern German Empire, received by its charter the name of Germany, a name as precious to us as it is geographically more correct, it seems appropriate to call the above-named 'Heart of Europe' by the name of 'Central Europe'.

This quadrilateral is morphologically, though not geometrically, the centre of Europe. We may conceive every other member of the body of Europe torn away, and there would still be left a Europe,

[1] 'Das römische Reich deutscher Nation', as it was called. [Tr.]

mutilated indeed, but still Europe. But if we remove Central Europe from the group of European states, then there is nothing left but circumferential fragments devoid of all connexion *inter se*. And a further demonstration of the central character of this vast mass of land is furnished by the fact that it is the meeting-place of Germans, Slavs and Latins, the three leading races of Europe.

In physical geography Central Europe may be characterized as the shelving off in an east and west direction of the main mass of the Alps down to the German Ocean and to the Baltic: a district which exhibits impressively the distinguishing features of Europe; viz. absence of all excess, and unity amidst variety. All the different kinds of relief are here arranged in zones. We descend from the jagged snow-clad ridges of the Alps to the plateaux of the Alpine Foreland, where the waters in the west, as elsewhere in the Alps, appertain to the basin of the Rhone, and those in the east to that of the Danube; but in the middle ranges they flow off from the varied mountain masses in every direction, the uniform goal of the whole network of rivers being the German Ocean and the Baltic. Finally, we traverse the broad expanse of lowlands with its navigable rivers, among which the glacier-fed Rhine knits together all the four zones and confers

on western Europe a more intimate connexion than any region in the east can boast of, since, barring the narrow passage of the river Elbe, not a single watercourse has worn a gap in the solid line of highlands from the Fichtelgebirge to the Carpathians, whilst the Danube directs its fate-laden way towards the east.

The loss of temperature that would accrue from the northward extension of the land is compensated for by its descent to lower levels; thus the mean July temperature of Munich (48° 8′ N.) is equal to that of Königsberg (54° 43′ N.). As is the case in the other parts of Europe, so also here, the reduction of temperature follows a south-west to north-east direction. The isothermal line of freezing water in January is traced in a curve from the mouth of Elbe across the river Maine to the South German Danube and to Bosnia. Persistent winter frost and permanent snow even in the plain is met with only to the east of that curving boundary-line. The ground is warmed to a higher degree, and for a longer time too, in the south-western half of Central Europe; there we find fields of wheat and of spelt side by side with fields of Indian corn; swallows and storks gain admittance to the lowlands of the Upper Rhine through the Burgundian gate, and our most valuable vineyards are distributed along the Rhine, the Neckar, the Moselle and the Maine. In

eastern Prussia, however, the warm season is already so much shortened that the red beech no longer thrives, just as it happens in Russia. We are favourably screened from the hot parching African summers of the Mediterranean regions by the highlands in our south ; from excessive precipitation such as falls to the share of western Britain by long distance from the Atlantic, the source of European rains, and yet we are near enough to the coast to escape the droughts of south-eastern Europe. Thus Central Europe unrolls before our eye the great variety characteristic of Europe in its landscapes no less than in its economic life : verdant mountains and valleys, plains of sapid pasture, fields of abundant fertility, or, at least, sufficiently productive to reward the husbandman's toil, and extensive forests of deciduous and coniferous trees. In yield of corn and of cattle it is, in our quarter of the globe, surpassed only by Russia in consequence of the latter's larger area ; in the abundance of wine and fruit it approximates France and the sunny south, and in industrial activity it is now surpassed by England alone, having learnt in the nineteenth century to exploit with ever increasing energy the enormous masses of raw material in metals, coal and salt, stored in the great variety of its geological formations ; its coast-lines with excellent harbours, especially those of the German Ocean, which

are free from ice the whole year round, secure to its industry uninterrupted communication with the trade of the whole world, and free navigation in all the oceans to the remotest corners of the globe.

Central Europe, which was intimately connected with France during the reign of Charlemagne, seceded from the Carlovingian monarchy, and assumed the name of the Eastern Frankish Empire. It is true that after the migration of nations its eastern half had been taken possession of by the Slavs, who had followed in the track of the departing Germans, but it was recovered to a great extent when the Teutons retraced their steps. When, after the extinction of the Carlovingian dynasty, the old Empire was organized by the Saxon Duke Henry out of the fragments of the Eastern Frankish Empire, it resembled a mere loose confederation of the German tribes that inhabited the western part of Central Europe, and its grouping was entirely ethnographic. To the main trunk of the Lower Saxons in the north were joined the Thuringians and the Hessians, the united Franks of the duchy of Lorraine, of the northern basins of the Rhine and the Schelde; that is to say, the inhabitants of our modern Rhenish provinces, Luxemburg, Belgium and the Netherlands, and finally the Franconians of the Maine and the Palatinate, the Swabians and the Bavarians.

But it is a fact hitherto too little regarded that political life was not developed within the four corners of these racial areas, but that, with the progress of time, the leading motives which made themselves felt sprung from the joint occupation of rounded-off regions of traffic; in other words, the geographic superseded the ethnographic element. At the time of the territorial disruption of Germany, at the expiration of the middle ages, the original home of the Saxons remained still for some time a political unit, since it extended to the southern end of the Rhenish slate-ranges, and comprised the modern circle of the town of Arnsberg in Westphalia (51° 24′ N., 8° 7′ E.) and the closely connected plain stretching from Holstein to the Lower Rhine. To it was joined a large section of the kindred races of the whilom Slavonic lands east of the Elbe, the inhabitants of which bear testimony by their Low-German dialect to the prevailing influence of the colonization of the Lower Saxons. Hessia too and Thuringia betrayed to some extent their common origin when they broke up most ungeographically into small communities in obedience to mere dynastic interests. But the duchy of Lorraine, the boundaries of which were in no way conditioned by the configuration of the country, speedily disappeared; the Palatinate similarly broke away from Franconia;

Swabia, split up into its geographical elements, the countries of German Austria, which were almost exclusively colonized by Bavarians, and were therefore mere border-lands under the suzerainty of the dukes of Bavaria, acquired independence, and became Alpine homes of the Bavarian race, connected only by the Danube with the mother-country, which is now restricted to the Alpine Foreland, to the border-lands of the rivers Isar and Iller and the northern limestone Alps, to the limits, in fact, which correspond with those of modern Bavaria.

The system of states of Central Europe of the present day does not in any way correspond with the borders of the component tribes of our race, which is distributed in fragments among five states. Holland, Flemish Belgium and Luxemburg are inhabited by Frisian borderers of Lower Saxony and by Franconians ; in Switzerland Swabians are associated with Romance races, and in Austria Bavarians live in uncongenial wedlock with Slavs. Only the inner German tribes, the Thuringians and Hessians, have adhered with absolute faithfulness to modern Germany, which comprises the main part of Central Europe. The German Empire of our day is the aggregate of all the tribes of that nation, exclusive of the offshoots settled in the periphery of the Central European states, or of those who have wandered far away into Great Britain,

Transylvania, Russia, or transoceanic lands.

It is true that the particularist interests of the several tribes were wont to oppose the unification of the nation, but that was before the existence of the Central European Pentarchy.[1] The Saxons still cherish the memory of their national hero Widukind, who aided them in defending their faith and freedom against the mighty king of the Franks (Charlemagne). In the south it was the Bavarians who delighted in offering resistance to the central power of the Empire; nay, even down to the eighteenth century Bavarian sympathies with the neighbouring state of Austria, kindred in race and religion, were so pronounced that the annexation of Bavaria to Austria was not a mere chimera. In the end, however, material interests prevailed and found expression, even before the creation of United Germany, in the adhesion of Bavaria to the Zollverein, and in 1866 in the customs' union of North Germany with the South German Confederation. The importance of natural lines of communication in effecting common aims of life among the inhabitants of different countries, and of thus establishing a healthy basis for political union, is clearly reflected in the political history of the now antiquated expressions of North and South Germany, during all the centuries that have elapsed

[1] Viz. the German Empire, Holland, Belgium, Switzerland and German Austria.

since the days of Arminius (the Cheruskan conqueror of the Romans under Varus), and of Marbod (the half-hearted adherent of Rome). The severances from Germany of Holland and Belgium in the north and of Switzerland and German Austria in the south, which are so striking a feature in the present political map of Central Europe, must be regarded as purely North and South German events, because in the formation of the smaller states of Central Europe no crossing of the border-line between North and South Germany ever had any permanence. This border-line extends from the Sudette Mountains and the Erzgebirge to the sources of the Maine, and thence, following the watershed between the basins of the Maine and of the Weser, it allots the Palatinate to South Germany. And even in the present German Empire the contrast that most obtrudes itself is that between the northern and southern groups of states.

It is not infrequently believed that this contrast is the expression of some mutual aversion of tribes differently endowed, but this is fortunately not the case. It is true that Swabians and Bavarians dwell almost exclusively in South Germany, but Franconians are settled in all the regions from Rhenish Prussia to the Palatinate, and indeed have resided for more than ten centuries along the Moselle of Lorraine as well as in the fruitful lands watered by the

Maine. The division of Germanism into north and south is by no means rooted in racial hostility. Why, are not the Germans of the southern half of Central Europe lineal descendants of the fair-haired North Germans, who have migrated south ? Along with a number of trifling peculiarities in dialect and usages a certain antagonism against North German ways has, no doubt, gradually taken root in the south. Even the Franconians of the Maine, men of undoubted northern descent, have, in consequence of their closer intercourse with Swabians and Bavarians than with North Germans, become South Germans. But is it not a characteristic feature of their national life, that the border-line between north and south is obliterated along the banks of the Rhine ? The South German diminutive *le* in place of *chen* is also heard in Cologne and beyond it. The Rhine constitutes the most valuable bond of unity in the west of the German Empire, indeed it is the backbone of it. Daily does father Rhine exhibit to us the effect produced by the traffic on his green waters, and on the lines of railway on both of its banks upon the intercourse between north and south, and demonstrates most convincingly that the unifying forces of our Empire will, all the more certainly, overcome the particularistic tendencies in proportion as the barriers of olden time, with their somnolent trade, restricted mostly

within narrow spheres, are made to fall; in proportion as by the ever increasing transport of passengers and goods the horizon of Germans expands and embraces all Germany, and brings home to them that the vigour of the Empire as a whole is beneficial to all, even the minutest part of the body politic, which, were it isolated, would feebly sing ineffectual hymns to liberty.

To be acquainted with one's native land is the indispensable preliminary condition to its due appreciation [1]. But this is not an easy attainment for a German, seeing that each district presents the imprint of a strongly marked individualism. Let us in a rapid survey of province after province attempt to depict the charming succession of tribes and landscapes, and their mutual influence on each other.

In the Allgäu at the sources of the Iller, and further east in the Bavarian Alps, the ground rises beyond the snow-line to the greatest elevation within our Empire. It is here alone, in all Germany, that the chamois is hunted; here dwell, during the summer months, the semi-nomadic herdsmen in their brown, weather-stained blockhouses on the green Alpine meadows, intermediate between the snow-clad summits of the

[1] Our learned and gifted author says in his famous *Schulgeographie*: 'There is no true love of country without a knowledge of the country'. [TR.]

mountain-ridge and the gloomy fir-clad zone of the lower slopes ; and these again are, in their turn, interrupted, here and there, by the brilliant verdure of the mountain pastures, with an all but total absence of arable land. This latter is usually restricted to the lower valleys in the neighbourhood of the villages. Deep repose rests over the whole country : its scanty population deriving a frugal subsistence from its forests and from cattle breeding. Swabians in the west and Bavarians in the east equally bear the stamp of their Alpine life. Health and vigour are expressed in their countenance and in their sturdy fearless walk along the giddy paths along the walls of a precipice. Confronted by superhuman powers, ever threatening imminent dangers, the Alp-dweller, though no devotee, is a man of sincere piety. The invigorating sense of victory, of difficulties overcome, is an experience more common here than anywhere else in Germany ; it is the accompaniment of the simplest daily occupations, such as bringing home a barrow of hay from the mountain, or floating down timber, or even going a mere errand. Their gladness finds vent in yodling [1] and loud huzzahs, stimulated by the sense of bodily health, bestowed by a nature as salubrious as it is glorious.

Some distance further on, the Fore-Alps,

[1] A shrill gay falsetto song. [TR.]

though less elevated, are still essentially mountain regions with Alpine climate and modes of life adapted to it. The farmsteads, mostly inhabited by cattle-breeders, lie scattered on the slopes ; the wooden chalêts with far projecting roofs are weighted with heavy stones as a protection against the prevailing high winds ; under the eaves of the roofs are the pretty characteristic galleries used for drying the garments so frequently soaked by the heavy downpour ; the tall, broad-brimmed Tyrolese hats are worn by both sexes ; the doublet of stout green baize (*Loden*), the short petticoat of the women to give free play to the limbs in walking, and the strong mountain shoes : all these are characteristic of the country and its inhabitants. But as we follow the boisterous Alpine brooks and rivers, the Iller, the Lech and the Inn, in their downward course the country grows more and more level, and is less exposed to heavy rains. Here dwells an agricultural, beer-brewing people in close communities. Surrounded by fields lie extensive villages with high red-tiled roofs, along with many an ancient city, which, with their venerable towering fanes, recall a great past to our memory. Ratisbon (Regensburg [1]) and Augsburg [1] indicate their Roman origin by their very names, but they were built by the Germans of old in their own Teutonic

[1] *Reginum* and *Augusta Vindelicorum.*

fashion. The prosperity of Augsburg and of minster-crowned Ulm was due to the whilom high importance of the plateau of the Danube for the commerce between the ports of the Mediterranean and the cultured west Rhenish provinces, which had reached a high degree of refinement much earlier than the Germans of the eastern provinces. By the modern resuscitation of her textile industry Augsburg evinces her active sense for industrial progress, which distinguishes the Swabians from the more leisure-loving Bavarians.

Munich, the most eminent beer-brewing city of the world, towers high above all the cities of the Fore-Alps; it is the shining Cyclops' eye in the broad brow of the German south, the centre of the active traffic between north and south and between east and west, the great corn-mart for the lands of the Alps, which are destitute of corn.

The valley of the Danube beyond Passau unites the South German plateau with Austria, and a number of convenient roads along the lower valleys passing through the Jura connect it with the rest of Germany. They lead into the river-basin of south-western Germany, an integral part of the south-western Rhenish system inclusive of the Rhine from Bâle to Mayence in its deepest channel. The basin of the Maine is the home of the Franconians of the Maine

(Main-Franken). On the arid keuper-sand soil, in the middle of the basin of the Regnitz, they have built their renowned city of Nüremberg, sheltered by the ancient imperial castle, which from its steep rock still overlooks it; the only city of the Empire, which, by the inventive genius of her inhabitants, has preserved to this day the renown of her mediaeval industry, though it was in no way conditioned by the nature of the soil. Elsewhere the Franconians of the Maine are devoted to exploit their trias lands by agriculture. In the region of Bamberg as far as Schweinfurth hop-gardens adorn the landscape, and in the warmer, lower regions of the 'Unterland', round ancient episcopal Würzburg, vineyards flourish. In the charming valley of the Neckar the descendants of the Swabian Juthungs [1] have turned their homes into a seat of harmonious co-operation between agriculture and industrial pursuits. It is not only the fertility of the fields, the abundant yield of fruit and wine of the terrace lands of the Neckar down to the lowest valleys that maintains the dense population of this small country, but also the active manufacturing industry, which utilizes the watercourses and consumes coals from the North German Rhinelands,

[1] The Juthungs are a section of the confederation of the Alemanni of South-West Germany, inhabiting the basin of the Neckar.

which is brought to the large factories of those regions by both rail and rivers.

Agriculture and trade adapting themselves to the configuration of the country are pursued separately in the South German Rhine basin according to the encircling mountain-ranges. The plain of the Upper Rhine has from of old deservedly been called the 'Garden of Germany', due to its genial climate and high fertility. The Rhine, too impetuous as yet for navigation, holds its eastern and western banks asunder as far down as the Palatinate, so that the inhabitants were politically divided in spite of their similar economic circumstances. The creation of the Palatinate at last joined the two banks also politically.

The history of industrial pursuits, depending as they always are on numerous chances, took differing directions in the charming mountain-ranges that bound the country. The men of the Black Forest made wood-carving their speciality: this led to the manufacture of clocks, musical and even costly orchestral instruments; the inhabitants of the Vosges Mountains took to the cotton industry, the chief seat of which is Mülhausen, which still follows the type of the industry of Switzerland, to which it formerly belonged.

The coal-fields, extending from Saarbrücken and Aix-la-Chapelle as far as Saxony and Upper Silesia, brought it about

that the modern manufacturing industry is preponderantly a feature of North Germany; and South Germany competes with North Germany only in those regions which are easily accessible to the coal of the North German Rhenish district, especially from the mines of the Ruhr, which are worked so profitably by water-power. Hence it comes that in the south-western basin such youthful towns as Mannheim and Ludwigshafen have rapidly grown, whilst provincial towns of the basin of the Danube, like Straubing or Amberg in the Upper Palatinate, remain insignificant.

Krupp's famous works of cast steel in Essen get their iron from far and near, even from Spain, but for coal they are, of necessity, restricted to the Ruhr district; their furnaces consume 1¼ million tons a year[1]. Earlier incentives to industrial pursuits in the Rhenish schist formation were the ore deposits. The sword factories of Solingen are as ancient as the bleaching and weaving industries on the Wupper, which expanded into the mighty trade of the double city of Elberfeld-Barmen with a population of 300,000 inhabitants. In fact, productive coal mines, great abundance of iron, zinc, and lead ores, joined with the inherited genius of the population for industrial pursuits, have collected the densest popula-

[1] Representing upwards of 3,400 tons a day! [TR.]

tion of Germany along this northern edge of the schist mountains right into the Berg-Mark countries.

The most celebrated portion of the Rhine Valley lies between Bingen and Bonn, and unrolls before us the rejuvenated creative energy of the people in almost every sphere of human activity. Along the banks of the famous river, enlivened as they are by the never ceasing traffic on its waters as well as on the lines of railway on both its banks, are lined in close array cities, towns and villages. The latter are often no more than a single row of houses, inserted between the green waters of the river and the steep, albeit low rocks, which skirt the banks of the winding river. The gloomy grey colour of these rocks is veiled by the verdure of vineyards and in places by copses of oak trees. On all sides our eyes are greeted by gaiety and by tokens of ever increasing prosperity; here and there a Roman watch-tower frowns down upon our modern life, throbbing with unremitting activity, and mediaeval ruins lie on the height cheek by jowl with stately mansions and lordly castles. It is the characteristic home of the wine-loving Franconians, who have for twenty centuries cultivated these richly endowed valleys, and have imprinted on them the stamp of their active energy. On the other hand, how far behind their brethren are the cultivators of the level

lands near the Rhine, the Moselle and the Lahn; how remote from the pulsations of modern life; how poor are they in comparison with the men of the same race inhabiting the Rhine Valley! The damp and cold rocks or clay of the Eifel, the Hunsrück and the Westerwald, are chilled by the cold showers of rain and snow swept along by the prevailing north-west winds, and niggardly nature yields the husbandman but a scanty wage for his unremitting toil.

To the east of these regions lie the Hessian highlands, inhabited from of old by an industrious, brave peasantry. Their country, lacking both coal and metal ores, offers a glaring contrast to the Rhine-lands: down to the thirteenth century not a single town enlivened its landscape; the rounded summits of their basalt mountains with commanding views, such as the Petersberg at Fulda, the Milseburg and the Kreuzberg of the Rhön Mountains, are crowned by ancient shrines, as if to prove the apparent quaintness of the dictum, that 'Basalt is conducive to piety'.

Where in the more eastern regions of the central ranges of Germany, as in the Thuringian, Saxon and Silesian Mountains, the lower lands in the immediate neighbourhood of the ruder highlands offer a soil favourable to agriculture, there the verdure of the firs and pines contrasting with the pale-yellow fields and their long-drawn rectangular

furrows below, show at a glance that the nature and elevation of the ground determine the pursuits of men. But with special and impressive force do the mountaineers of these ranges illustrate the saying that 'Necessity is the mother of arts and industries'. Were the soil more fruitful so as to reward the clearing of forest lands for agriculture, and were the winters shorter and less stern, then the needy inhabitants of the Hartz Mountains would not have been driven to search with danger to life and limb for veins of metals in the bowels of the earth, and would not by incessant improvement of their processes have become model mining-schools for the whole world; and just as little would have sprung up their remarkable domestic industries, nor would their glass-works have reached the high perfection which is seen in all the regions from the forests of Thuringia to those of the Sudetic Mountains. The rule that the density of the population decreases as the elevation of the ground increases frequently seems to have been reversed here, thanks to the diligence and the high artistic ingenuity of these mountaineers. Thus it has come about that the inhabitants of the Erzgebirge live on the upper ridges of their ranges, where hardly anything but the potato comes to maturity, in denser masses and in more populous villages than do the peasantry below on the fertile loess of the level fore-

lands of the Pleisse, the Mulde and the Elbe. Their ancestors had settled as miners on these lofty heights, and when the mines all too soon gave out, the descendants, clinging with passionate love of home to their barren gneiss soil, took to carving, cabinet making, lace manufacture and fine embroidery. They now lead a joyous life with an all but Chinese frugality on potatoes and thin coffee: a cheery, numerous population delighting in thrift and merry song.

Finally, we behold, on a more imposing scale, the victory of the nation over the inclement nature and stingy soil of the North German plain. Germans have known how to wring in ever increasing quantities the means of existence from the wretched diluvial sand; nay, to erect neat habitable homes, and create prosperity on mere moorlands. It is just by the hard toil, which has to be renewed from year to year and is so indispensable to the very existence of the peasant and his family, that the hardy race of men has been reared, which by faithfulness and sturdiness, by perseverance and bodily vigour, has helped to create Prussia, and thus lay the foundation to the new Empire. The unvarying accessibility of these plains, the navigability of their rivers, their situation between the sea in the north and the carboniferous and metalliferous mountains in the south, they themselves being destitute of these minerals, have

combined to raise in this age of steamers and railroads the trade and industry of the country to a height never before imagined. That 'work creates prosperity and power' is exemplified most impressively by the rise of these very northern lands from their former indigence. That the centre of gravity of the new German Empire lies in its north-east is due far less to the predominance of Prussia than to the economic progress of these lands. Down to late mediaeval times the seat of the intellectual life of Germany, and of the flourishing growth of larger communities, was in the south-west of the Empire. Now, however, the culture of arts and sciences has penetrated to the easternmost borders, where cities of every size are scattered over the plain. These have arranged themselves mainly in three series. One is to be traced from Aix-la-Chapelle via Leipzig to the Sudetic Mountains, following the foot of the ranges and utilizing the fertile soil. The inhabitants exploit the trade in the products, naturally various, of plains and highlands. The second series lies in the great central axis of traffic, which forms part of the great European highway from Paris to Moscow; it comprises mostly cities with important bridges like Cologne, the hoary, yet ever youthful; also Hannover, Magdeburg, Berlin, the natural eastern centre of the north-eastern plain; then Frankfurt on the

Oder, and Posen. The third series comprises the towns on the coast, which have only just completed a waterway wholly German by means of the Kaiser Wilhelm Canal. As far back as the days of the Hanseatic League these cities were the pride of Germany, the ports of the transoceanic commerce with England, Scandinavia and Russia. In the Baltic trade Lübeck naturally became the Venice of the Hanseatic League [1]. At the present day German commerce, penetrating all the regions of the world, naturally looks to the north-west, where Hamburg, the German London, situated on the innermost nook of the only oceanic gulf with a German coast-line, has, thanks to the energy of her citizens, risen to be the leading commercial port of the continent of Europe. What would Germany be without Hamburg? And with equal justice it may be asked: What would Hamburg be without Germany and her gigantic industry and powerful protection?

The Germans of the Empire are knitted together not merely by bonds of kinship of high antiquity, formed, it may be, on this very soil, and by a common history of more than ten centuries' duration, but above all by the common country, which they are

[1] The burgomaster of Lübeck, or of whatever city happened to be the head city of the Hanseatic League, was, like the Doge of Venice, the peer of the proudest princes and kings. [TR.]

bound to cherish and to defend. By their splendid navy, so long and ardently but vainly desired, they must protect their most reliable frontier, their coast-line, as well as their commercial fleet sailing all oceans under their black, white and red flag; and their mighty army must shield from harm the peaceful development of their industries. This country claims their gratitude, besides their cordial co-operation as the indispensable condition of their very existence. For to it they owe, what far transcends all petty local interests, the stern discipline of hard toil, thrift and good morals, the common heart-throbs of faithful men.

VIII

CHINA AND THE CHINESE

VIII

CHINA AND THE CHINESE

China, formerly so closely shut against the hated foreigner, has recently formed a bone of contention among the Great Powers of Europe, each of whom has been striving to obtain as large a share as possible of the prosperity anticipated from the recent introduction of railways. For the opening up of China to traffic must necessarily lead to a vast expansion of foreign trade, a matter of no small importance in the case of a population certainly exceeding in number the combined populations of America and Africa. What large sums may be looked for from the construction and working of the railways alone, and through the intelligent exploitation of the immense coal-fields among the teeming population of China! Even to those in Germany the promise of a good share of profit is held out by the seasonable annexation of Kiow-Chow, with its excellent position as a port of entrance to the interior of China.

But quite apart from its economical importance in the immediate future, China is one of the most interesting countries of the world from a purely geographical point of view.

The country which essentially forms the state called China—for the outlying dependencies of Manchuria, Mongolia, the Tarim-basin and Thibet are but loosely connected with it—offers an imposing appearance from the density of its population. There are but few countries in the earth that surpass China in extent—these are: three in America, the Sahara in Africa, Siberia in Asia and Russia in Europe. However, if we were to lay China upon the eastern state of Europe, scarcely a border province or two of Russia would protrude. Of all continental countries China approaches most nearly to the circular form, which seems to be the most advantageous shape for a state, inasmuch that it is proved in geometry that it is the figure of least perimeter for a given area, and hence states of a circular form offer the shortest possible line for attack. The boundary of China is terrestrial and maritime in about equal shares. The north-west boundary, starting from the province of Shing-king, in the district of the Liau, in southern Manchuria, proceeds with somewhat erratic indentations and curves through the zone of transition, where the riverless district of Central Asia commences,

everywhere throughout its course meeting countries which are, like China, inhabited by peoples of the Mongolian race, and which are subject to the power of the Chinese Government. The south-east coast bulges out into the Pacific in an almost unbroken semi-circle. The approximate centre of the circle is at the point where the Yang-tse-kiang leaves the great western province, the red region of Serchwan, to enter the province of Hupe. If a circle be described with this centre and a radius of 700 miles, only the province of Pechili, on the north-east beyond Pekin, will protrude beyond the circumference, if we leave to Central Asia the East Turkish valley of the Tarim, which has recently been added to the eighteen old provinces of the Empire. This radius is equal to the distance from the extreme south-west of Germany to the mouth of the Nogat on the Frische Haff, or to that from Hamburg to the Land's End, the south-west corner of England.

China forms an ancient portion of the mainland of Asia, a portion which has not been covered by the sea since the Jurassic period. It has a rocky basis of early crystalline formations, of palaeolithic slates, limestones and sandstones, and the older mesozoic strata, but chalk formation and marine tertiaries seem to be entirely absent. Nowhere do we meet with white chalk cliffs like those of Rügen ; nowhere appear the

deep valleys and rounded mountain tops of cretaceous limestone such as those in Saxon Switzerland ; nor recently extinct volcanoes side by side with active ones, as in the great belt of volcanic activity that stretches from the Malay Archipelago, past Formosa and Japan to Bering Sea.

China possesses no extensive plain except in the north-east. There we get the deposit of yellow *lōss* [1], from which the mountainous peninsula of Shan-tung juts out like a spur. The rest of China is for the most part mountainous, and this character gives rise to a marked division between the northern and southern halves. It has been pointed out by Richthofen that the real line of division is a continuation of the primitive range of the Kuen-lun, that veritable backbone of Asia. This is the Tsing-ling-shan, which, keeping the main direction of the Kuen-lun east by south, passes with scarcely any interruption from the interior of Asia right across the middle of China, nearly as far as Nanking. This line of division not only forms the watershed between the two giant rivers, the Hoang-ho and the Yang-tse-kiang, which flow eastward through China from distant sources in Central Asia, but it also parts two essentially different mountain systems. Northern China presents

[1] This is a yellow friable clay ; it is not known in Great Britain, but occurs on the Rhine and in Madagascar.

to us a mountain-land covered with débris ; in remote time a quantity of disintegrated rock, fine grained and clayey, called *lōss*, was spread by dry winds over hill and valley. Each new layer of this covering was bound together in itself and united to the earlier layers by the roots of grasses, so that as a rule only the firm rocky cliffs of the mountain-ridges stand out from the yellowish-brown covering of *lōss*, often thousands of feet in thickness, like the roof-tops of a village in the German mountains after a heavy fall of snow. The mountain landscape of northern China, however, is by no means merely composed of rounded ridges with flat, upland valleys of unstratified *lōss* planted between them ; on the contrary, the flowing waters have elaborated an extremely complex system of arteries in the soft débris of *lōss*, and the capillaries running off vertically from the long roots of dead grass have produced steep valley walls of quite a grotesque character. Even at the present time the winds rain clouds of yellow dust from these ravines in dry weather, so that the sunshine looks quite pale through the straw-coloured atmosphere, while travellers on foot or horseback get completely covered with yellow *lōss*, as they make their way along the valleys. The rivers, of course, carry down towards the sea this *lōss*, eroded from their banks or borne into

them by the wind, and the waters of the Hoang-ho are for this reason always yellow, giving to the river its name, the Yellow River. It has heaped up the yellow delta of the north-east, finding an embouchure for itself now north, now south of the peninsula of Shan-tung, turning this way and that in its bed like an unruly monster, and bursting again and again through the protective walls raised by the hand of man to restrain it. It has given to the gulf of the East China sea the name of Hoang-hai, or Yellow Sea.

In the south it is quite different. Here the mountains have, far more commonly than in northern China, the characteristically Chinese direction—south-west to north-east. They lie in long parallel rows at right angles to the Kuen-lun and the Tsing-ling-shan, in approaching which latter they bend eastward, as their development evidently met with an obstacle in the old barrier already existing; and most important of all they have remained without a covering of *lŏss*. They stretch up their bare summits to the sky without any veil; no *lŏss* wafted by the wind has encumbered the escarpment of their slopes; the waters hurry down from the heights in swift descent, uniting to form clear, unmuddied rivers. In the forefront is the Ta-kiang, the 'Great River', which we usually call the Yang-tse-kiang. This takes its rise high up in Thibet,

and when it has attained its full strength in the Serchwan basin by the addition of considerable affluents, it roars through the middle of the country, confined in a wonderful gully-like bed between lofty walls of rock, in a succession of rapids, and then brings its progress to completion in majestic calm as the most navigable river in China, emptying itself in the lake crowded delta which it was helped to build by the Hoang-ho in the north, until the latter chose to turn away from it in 1852. The chief ornament of southern China is its evergreen vegetations. While the *lōss* in northern China as elsewhere is inimical to the growth of trees, the extraordinary moisture of its finely-sifted stoneless soil nourishes field on field from the level of the plain to the elevation of Mount St. Gothard; but the cultivation of the soil in southern China keeps more to the bottoms of the valleys and the lower mountain slopes, but on these is displayed a primeval wealth of vegetation, species of evergreen shrubs and trees with a fullness of growth distinctive of China. Among these, camelias, related to the tea-plant, play a conspicuous part.

When the fearfully cold air of eastern Siberia and Mongolia is spread over China by the winter monsoon from the north-west, this current is but slowly warmed in its progress through a country of the latitude of Italy and the south of Africa. Even

in Canton, although it lies within the tropics, there is an occasional fall of snow. At the same time southern China has a comparatively mild winter; the palms and elephants of its tropical portion recall India, while the orange and the sugar-cane also flourish, and the tea-plant is cultivated everywhere. In North China this cultivation is excluded by the long frosts. Pekin, although it lies further south than Naples, has a winter like that of St. Petersburg. Mukden in Shan-king, the great city where the tombs of the emperors lie, at just below the latitude of Rome, experiences in January far severer cold than Moscow. But when the wind passes to the opposite direction in spring, the equally persistent southern monsoon sets in from the south-east, hot air from the tropics is distributed over the whole of China, and fertilizing rains fall on its fields of rice and cotton, most plentifully of course in the south. The contrast of temperature between north and south such as exists in winter then quite disappears; there is scarcely a measurable difference of heat to be traced between Canton, Shanghai and Pekin, for the warmth in midsummer increases not from north to south but rather towards the hot region of Central Asia: that is, from east to west. Of Hankow, the most important commercial city in Hupe, it has been said that if the devil were to spend the summer there, he would

want his overcoat on his return to hell. There is only one other part of the world which, under the similar influence of a monsoon or wind lasting the whole season, thus alternates between arctic cold and tropical heat, accompanied by torrents of rain from the neighbouring sea. This is the United States of America. While here, however, the beneficent influence of the warm, damp winds of summer is almost exclusively confined to the eastern third of the country, China as a whole experiences the interchange of a refreshing winter and a tropical summer in the regular seasons, while she enjoys a rare combination of the advantages of the temperate and the torrid zones.

For thousands of years have the Chinese been exposed to the influence of nature in this their latest place of abode. Even if they have retained many traits of character brought with them from their earlier dwelling-place, which is believed to have been the east of Turkestan, it is yet worth while to examine how far China itself has helped to shape its inhabitants by its telluric training. Nowhere else have we had before our eyes the case of a people counted by hundreds of millions which has been so long subject to the same influences of nature. It is truly an experiment on a huge scale, than which a geographer cannot hope for a better one.

The first conclusion which forces itself upon us in connexion with what has just been mentioned is, that the contrast recurring every year, through the change of the monsoons, between polar cold of winter and the tropical heat of summer permitted no men to live in China who were too tender to endure other than moderate changes of temperature, and that at the same time only those proved themselves capable of supporting life who could oppose equal power of resistance to heat and to cold, thus to some degree uniting the endurance of the Yakuts or the Chukches to that of the negro. The only people on earth who actually do that are the Chinese. For this reason they are the only men who when they go abroad, whether to high or low latitudes, seldom or never fall victims to the climate. The Chinaman in Manchuria defies cold that freezes mercury, and works cheerfully under the vertical sun of Java and Singapore, or in the boiling hot air of the sugar vats in the manufactories of Cuba. At home he has to row a heavy boat up stream in July, with the thermometer between 86° and 104°, from early in the morning till late at night, at most now and then getting a little cool air by fanning himself, and has also to convey still greater burdens with the same persistence half a year later, on the frozen surface of the same river, on a sledge through the cutting cold. Emin Pacha's idea of intro-

ducing Chinese as colonists in tropical Africa was justifiable on physiological grounds, for it is a most striking fact that next to the negroes the Chinese are least liable to malaria, as was shown in the construction of the Panama Railway.

As regards the moral peculiarities of this, the oldest civilized people at present existing, we might trace these back in great part to the fact of the density of the population, which has existed from time immemorial, and this again may be shown to be due to two co-operating factors, one depending on the nature of the country and the other religious. The northern half of China was the original site of Chinese civilization and political existence, and, as we have seen, it is the portion covered with *löss*, where the extraordinary fertility of this yellow earth in the cultivation of corn co-operates with the high degree of warmth during the summer, and with the monsoon rains which accompany it with unfailing regularity. Here then nature provided the possibility that a gifted nation of husbandmen should develop under the protection of political order, first in the *löss* plains of the Weiho, a tributary of the Hoang-ho, as well as in the other mountains and valleys of the interior; afterwards in the low country, still better fitted for a dense population, which slopes in the north-east towards the Yellow Sea, but which required

previous draining as being the latest formed land of the delta. This stands out in the annals of the country as the earliest step in cultivation taken by Chinese intellect and Chinese energy, and the account of it has not yet lost its brilliancy. That this possibility offered by nature of giving rise to a great nation of husbandmen by the sweat of their brows was brought to realization is, in great degree, due to feelings of reverence for ancestors so deeply impressed in the Chinese character. Confucius, the great Chinese philosopher, who at the time when Cyrus was laying the foundation of the Persian Empire was teaching his nation by means of his elaborate system of morality—a system which still to the present hour affords a salutary rule of life to millions—found this reverence for ancestors already of long standing. It goes back to the time of worship of the dead, which was found among such numbers of peoples and is still found among many. Sober and realistic as the Chinaman shows himself in all other matters, he has inherited dark presentiments concerning a mystical existence beyond the present life on earth. He dreads the punishments which await him after crossing the gloomy threshold of the grave, but is consoled by a general assurance of finding rest in a future world, if only the indispensable condition is fulfilled, that at every anniversary of his death the sacri-

fice for the dead should be duly performed. This, according to ancient prescription, no one can carry out except the son of his body or the male descendant of the latter. Hence the keen longing of the Chinese to enter into matrimony in order to beget sons, and to get these married in their turn as soon as possible. Only the most wretched poverty can restrain a Chinaman from marriage. There are consequently hardly any bachelors in China, while grandfathers of thirty-four or thirty-six are not uncommon. The birth of a boy is welcomed with jubilation in the neediest hovel, while even in the house of a wealthy man the birth of a daughter is looked upon as a disagreeable incident, almost a calamity. The wife who does not give birth to a son year by year has to suffer without a murmur her husband's taking a second woman either as a wife or a concubine. Here Sarah never permits herself to utter the demand to put forth Hagar and her son; she has humbly to respect and honour Hagar, for it is she who has helped her husband to fulfil the greatest wish of his life. Let us also bear in mind that when the Chinese have crossed the sea to emigrate, as they have lately done to so palpable a degree, to Australia and America, but almost exclusively from the two southernmost provinces of Fokien and Kuangtung, these emigrants are constantly striving to return home as soon as they have gained a

good position in life, because, in face of their passionate attachment to the soil of their fatherland, it seems shocking to be buried in foreign earth. It is thus not wonderful that China has always been the most populous region of the earth. Until the recent rise of Philadelphia and Chicago China was the only country with a number of cities of a million inhabitants, while there are about 1,500 large towns with quadrangular walls of brick like those of ancient Babylon, many of these walls being from twelve to twenty miles in extent, and having in addition populous suburbs outside the gates: and what streaming in and out of country folk goes on every day, from the time when they are opened at sunrise, to the sound of cannon, gong or bell, till they are closed at dusk with similar sounds. Both in the crowded streets of the towns and in the town-like villages, we are constantly struck by the numbers of children in the families, while the numbers of aged men is still more surprising: the Chinese being one of the longest lived nations owing to their immunity from fevers, in spite of the numerous diseases with which they are troubled and their miserable quack medicines.

It is true indeed that China is not quite so densely peopled as the German Empire, for it has scarcely 205 to the square mile while Germany has 264. But considering that China has only just commenced manufac-

tures on a large scale, what will it be when, as is to be confidently expected, the commencement of railways is followed by the introduction of steam machinery and electric traction. Till now the Chinese have lived as Germans did in the middle ages, almost entirely by agriculture, handicraft and retail trade. And for this reason the population of Kiang-su, on both sides of the mouth of the Yang-tse-kiang, the most productive province as regards rice and silk, has risen to at least twice the average: a very high proportion.

We ought not to laugh at China for its patriotic pride, even when it expresses itself in contempt for the foreigner. Its existence as a state has lasted like that of no other country since the time of the Pharaohs. Religions have sprung up and passed away around China, but the teaching of Confucius has remained in full force through thousands of years. Economically too China has sufficed for herself, while predominant over all the neighbouring states, she has again and again carried her victorious arms to the Caspian Sea under the banner of the dragon, and has seen the vast interior of Asia almost constantly at her feet. She needed nothing from the foreigner, either for subsistence or clothing. She even turned away the wares of the red-haired devils who landed on her coasts from time to time under the flag of England or America, so

that the English, in order not to have to pay for tea and silk with silver only, were obliged to resort to the vile importation of opium, stimulating the vice of opium eating.

Thus, up to very recent times, the condition of Chinese economics, unlike that of any other civilized state, was that of a constant attempt to hold the balance between a too unlimited augmentation in the numbers of the population and the sum total of the exclusively native products of the country, that had by no means of unlimited powers of increase. It was this which brought into being a struggle for existence sterner that of any other nation on earth. It evoked and reared to perfection the noblest attributes of the Chinese character: incomparable industry, patient endurance and the utmost frugality in his mode of life.

Only in China has it become possible to convert into its exact opposite the ancient desire of our race for a free and idle indifference to the morrow. In this gigantic workshop of China—where there is no Sunday's rest, where the gospel of an eight hours' day has not been heard of, for otherwise there would be starvation—the impulse to busy action has become a second nature to the people. Even to the deeply hated employers of San Francisco, where the Chinaman is employed somewhat as a domestic servant, he per-

forms his appointed task without supervision, simply because to him living means working. And in spite of all his indefatigability, in spite of his astonishing handiness over his work, which gives such surprising results in so many branches of art with the simplest possible tools, so great is the mass of offers of skilled service that the Chinaman earns on an average what we should think starvation wages. It sounds like a fairy tale that a grown-up man maintains himself for a little less than a penny a day, and in times of scarcity even for three farthings. With this he meets his needs in rice, vegetables, fish and tea, even keeping a trifle over for tobacco. This is explained on the one hand, by the extreme cheapness of the means of existence, and, on the other, by the excellence of their cooking, which turns to good account what is bad and almost uneatable, nothing whatever being thrown away; and also, it is true, by the extreme frugality of the Chinaman and his freedom from daintiness, so that roast dogs, cats and rats, and even the flesh of horses or asses that have died from disease, are to him attractive delicacies.

No people practises the virtue of economy to so high a degree as the Chinese; together with industry and frugality it is the main weapon for the struggle of life and for laying the foundation of a home of his own. The peasant of northern China burrows for

himself a subterranean shelter, like a marmot, under his field of millet or wheat, in the steep wall of *lõss*, at its edge, so as not to curtail the produce of a single square yard by building a cottage on the surface. A touching example of genuine Chinese economy was recently related from his own experience by an American missionary, showing that laudable family feeling extended even beyond the grave. He saw an aged woman, extremely poor, scarcely able to hobble along, groping her way with difficulty by help of the walls of the street. She was taking her last journey ; she wished, with death before her eyes, to go to the house of her nearest relative in order to be buried from there, so that the undertaker might not charge so much as from her own house, which was further from the cemetery.

The contemplation of a people amounting to more than a fifth of the human race wearying themselves with such grievous labour in such monotonous joylessness, always doing from the first dawn of day till late in the evening, nay, often driving off sleep through a great part of the night, cannot but induce a sad feeling of sympathy. Is not the golden freedom of the savage more enviable than this miserable work of the civilized man ? Has not our race in accepting the yoke of labour, while this undeniably brings with it a higher morality, lost in the joy of existence. Here, however,

we measure by our own measure without due consideration. We deceive ourselves in thinking that the Chinaman, with his eternal pressure of work, must have sunk into a condition of stupid misery. Far from it! Wide as are the variations in temperaments and talents, as well as in personal appearance, through the eighteen provinces, from the yellow southerner somewhat inclined to corpulence to the brown, slender and tall northerner, there is an innocent cheerfulness, a calm contented gaiety, not easily to be bent even by hard blows of fate, proper to the whole people almost everywhere. Even in this we may recognize a trace of telluric selection. As the night of polar winter admits only those whose joyfulness of disposition is not to be destroyed, so the struggle for existence among the Chinese removed from life not only the lazy and luxurious, but even those among the heroes of industry and starvation to whom such heroism caused disgust. And thus we see a gaiety inherited from ancient times standing beside the famishing assiduity of the Chinese like an atoning angel.

The striving to cut out his numerous rivals for the scantiest return has, it is true, developed a sordid side to the Chinese character as well. With the capacity for trade and finance, for crafts and agriculture, cunning, lying and treachery go hand in

hand. The living together in badly ventilated rooms and the widely spread poverty have caused a repulsive indifference to cleanliness in body and clothes. The greediness for material rewards in the working classes and the official class, which latter can only be entered by means of diligent study of the Chinese classics, does not give rise to any art higher than those which are of technical application, no science that is of investigation into the inner laws of the universe. The muses and the graces never made China their home.

One-sided vastness is the characteristic of the national development of the Chinese. Up to the present time we may say that two species of civilized man have existed: one with the stamp of European and the other with that of Chinese culture.

The closer contact of these two will form in its probable consequences one of the most important events of the twentieth century.

The boundary separating Europe from China is disappearing; in its place stands the South Siberian Railway, the first Pacific railway of the eastern continent. In what position will the wages question be if the yellow race enters the labour market of Europe. What revolution will take place in the trade of the world when China, with its treasures of coal and its cheap

labour, passes over from petty industries to manufactures on a large scale ?

Chinese development may take shape more harmoniously than we expect ; many a shady side of its till now stiff and independent civilization may light up under the fertilizing power of the genius of the West. But the adamantine cement of its social state, its honourable family feeling, will remain, and so will its nervous endurance of all climates and its simply inexhaustible wealth of labour, diversified as it will be by the introduction of our methods in the details of its economical system. A great future without doubt awaits this nation. For the word of the poet holds for peoples as well as for individuals : ' In thine own breast stands the star of thy fate '.

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